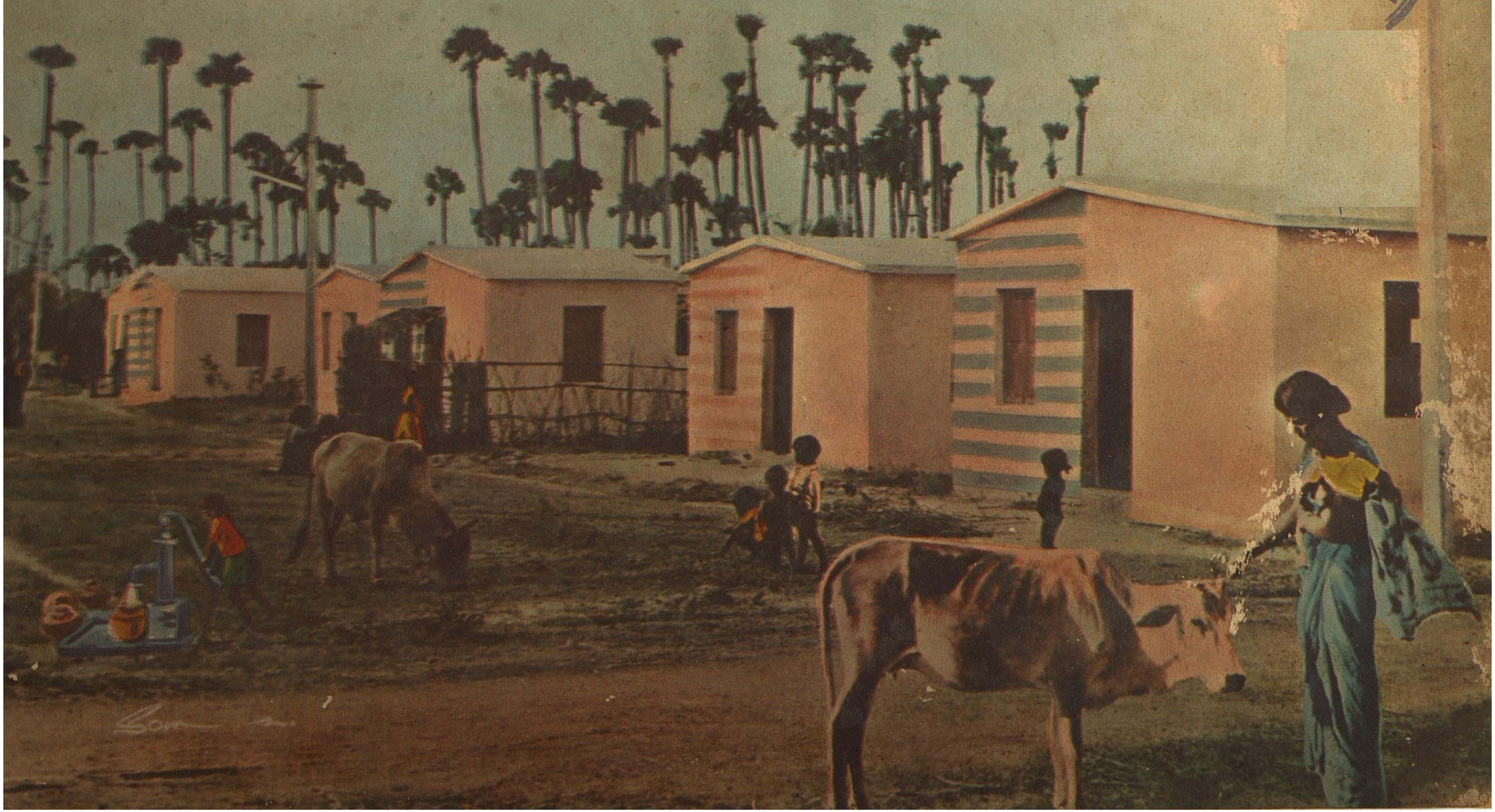
Tamil Arasu

DECEMBER
1975, 50 Ps.



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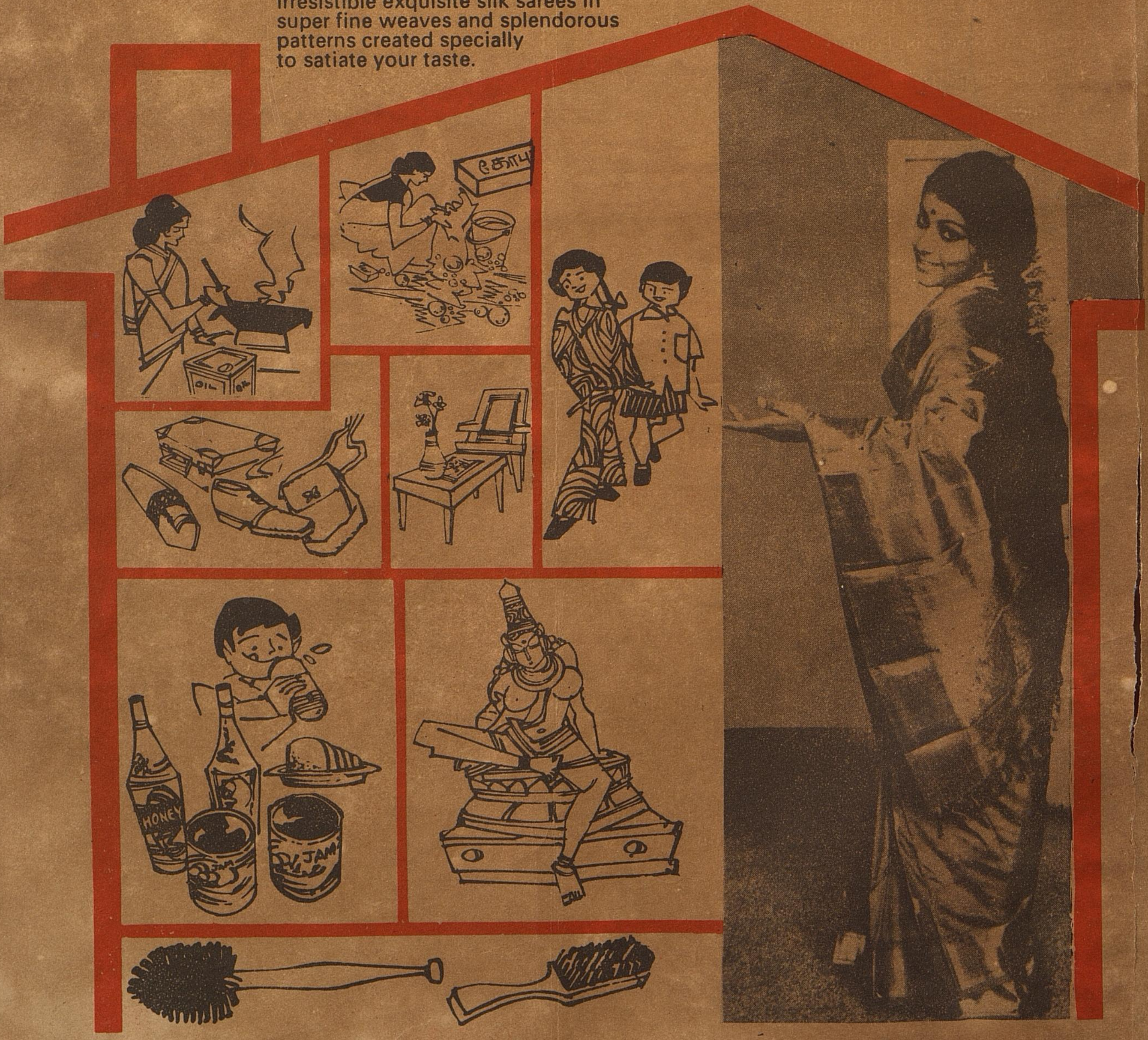

Tamil Arasu

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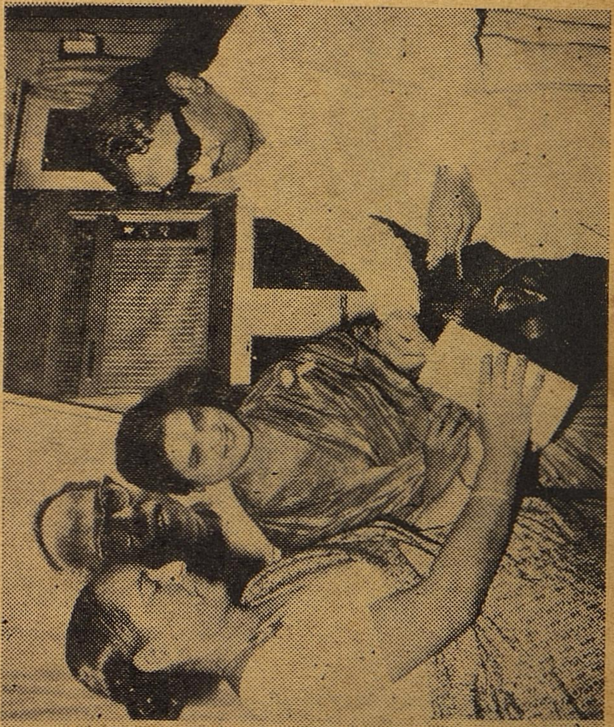
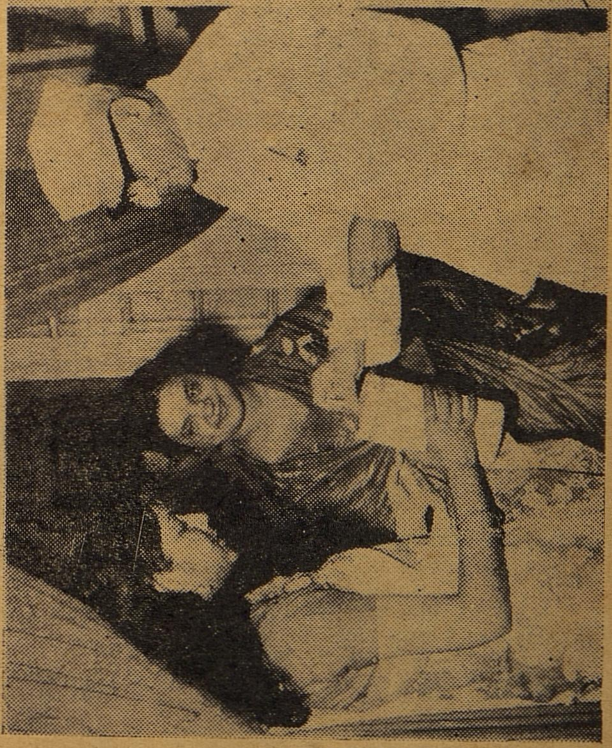
ARMED FORCES FLAG DAY

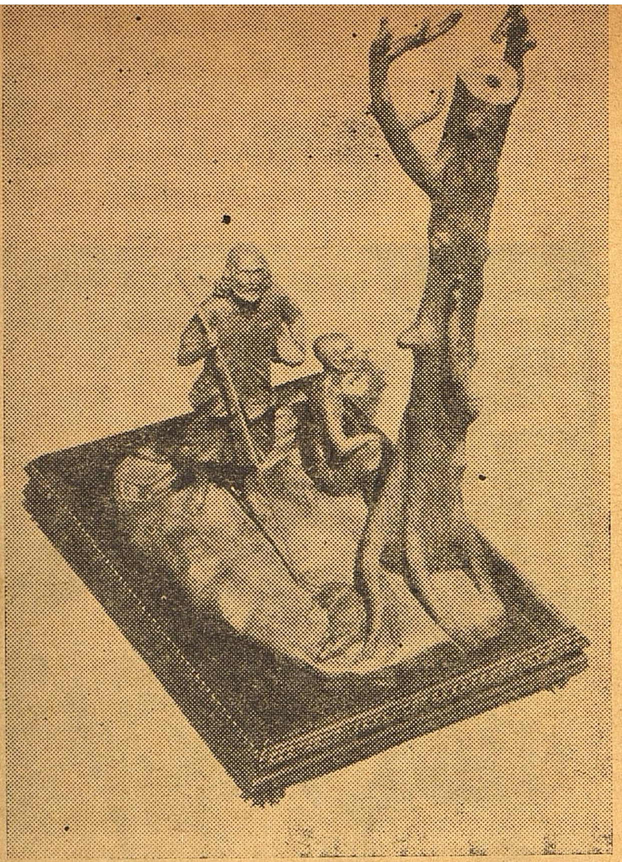
The Flag Day has become an institution which reminds us of our duty to our Soldiers and ex-Servicemen.

The Central and State Governments have of course, taken a number of measures for the Welfare and Rehabilitation of ex-Servicemen. The community also has a significant role to play. It has not only to supplement the governmental effort but also to generate an atmosphere in which the Service personnel can feel assured that the entire community is backing them up.

Here, in the two pictures are seen the Governor and Chief Minister contributing to the Flag Day call and giving the lead to the community to rise to the occasion.







WOULD BEGGING ONE DAY BE KNOWN ONLY THROUGH WOOD and STONE CARVINGS

Wishes the

CHIEF MINISTER

The Mahatma Gandhi Birth Centenary Memorial Awards instituted by Victoria Technical Institute for outstanding artists of 1975 were presented to the winners at the Institute at a colourful function on 3-12-75 by Chief Minister of Tamil Nadu, Dr. M. Karunanidhi.

Thiru Mahendra of Kerala, obtained the first prize for his impressive oil painting, ' Music of Melon-choly ' ; Thiru Subramania Achar won the second prize for his exquisite ivory inlaid rosewood table. ' Beginning of a Day ' a carving in teakwood won the third prize for Thiru K. K. Valsan. Certificates of merit were given to two Madras artistes Thiru Udayashankar for his oil painting, ' Madurai Temple ' and Thiru Thirunaavukarasu, for his terracott a work of "a lady's head".

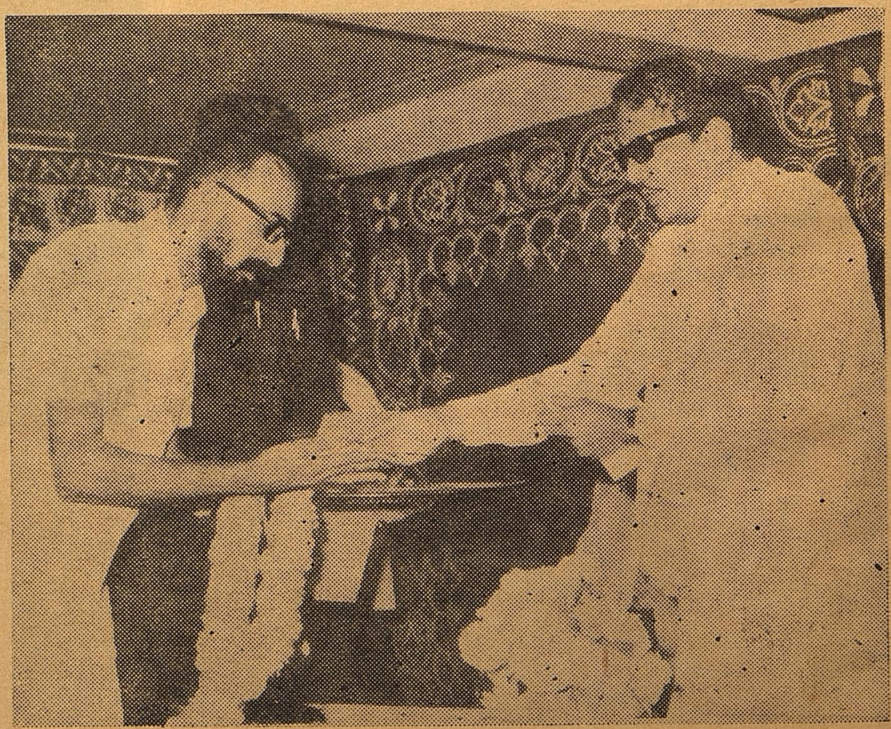
" It gives me great pleasure to participate in this pleasant function held annually by the V. T. I. said the Chief Minister, and added :

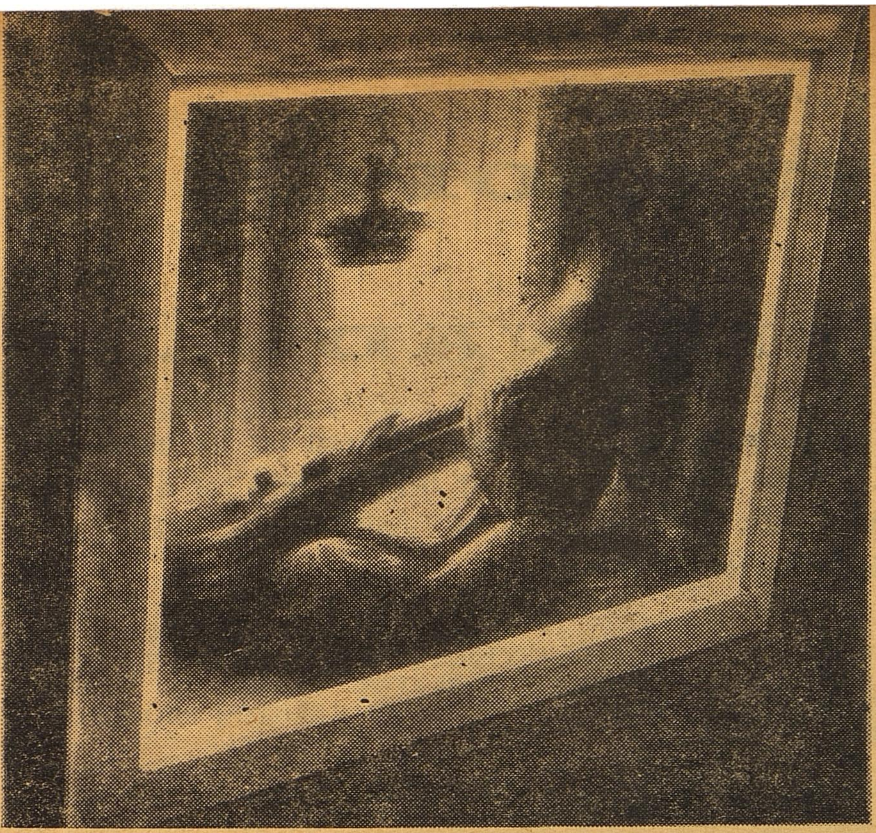
When the word handicraft is mentioned it denotes the skill and efficiency of the local craftsman which results in world wide acclaim and contributes to the further development of the area.

The Government would do its best and take all measures to encounrage talented craftsmen and artisans. Steps would be taken to conserve rosewood and ivory available in the State for supplying raw uaterials to the makers in handicrafts.

The award given for the second prize winner is for a carved rosewood table inlaid with ivory. It depicts scenes from the life of Krishna. This has been bought by a foreigner for Rs. 8,000 which gives me great pleasure since it proves how much our art is being appreciated abroad. Our country is full of legends and puranas that have been handed down to us. Such rich legends and mythology give great scope for the artist and the sculptor to show their skill of which this carved table is one such example. I do not want to go into the authenticity of the puranas. But as an art they are of great use to test the in-

Thiru Mahindra receiving Award





discussed. I was told that it came under "Miscellany". Though it was 'miscellaneous', I considered the subject highly important and made an appeal, that the practice of auctioning old temple cars be put an end to.

During those days, there was a practise to auction old temple cars, all over Tamil Nadu. Twenty or thirty persons used to gather at the auction and saw to it that they were not auctioned for more than five or ten thousand rupees. After removing the timber portions they used to sell the figurines for 20 thousand rupees to persons in Bombay and share the 10 thousand profit amongst themselves. These from Bombay, in their turn would sell the figurines at exhorbitant prices to westerners. Even though we manufacture temple cars more exquistely and even better, the westerners will not go for them. They are particular that the figurines are ancient. They attach great importance to the hoariness, the antiquity etc., the older they are the more readily will they sell.

Such auction resulted in a great loss to the Hindu Religious Endowment Board. The loss is also great, since we find that our beautiful handi crafts are found as decorative pieces in the drawing rooms of millionaries of America, Britain, Germany and Italy. I had made an earnest appeal for the protection of these handicrafts. But it went unheeded.

After the change over of Government, today, the auction of temple cars has been put to an end and the figurines have been given adequate protection and are preserved with great care.

Today, while we admire, the exquistely done paintings and carvings and the beautiful pieces of handicrafts, we cannot help wondering at the aesthetic sense of our talented craftsmen and artisans, through whose skilled hands these have been executed."

**

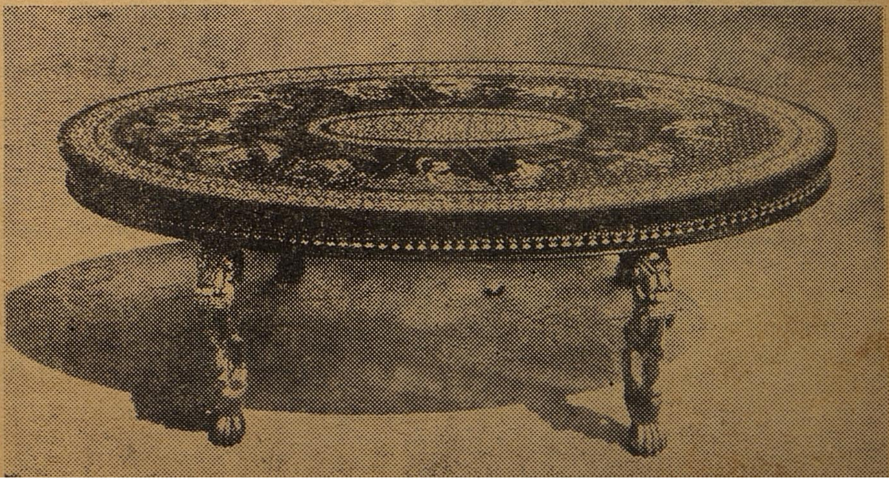
geunity of the craftsmen and artisans. The third piece, carved in teak with the title, 'Beginning of a Day', depicts a day in the life of a beggar. First we find him sleeping; next he is seen getting up at dawn and getting ready for the day. This simple carving throbs with life. Looking at this carving. I am much moved by it and would rather have it that the beggary in the country should also become wooden; and begging should not be present in our midxst. This is the aim of the Government. After beggary is wiped out and begging itself becomes a thing of the past, we can have them with us in wood and stone as beings who were with us once upon a time even as one learns from another carved piece that Krishna lived once upon a time; It is also my fond hope that the existence of beggars should one day be known only from carvings of stone and wood and not from life. I consider that this unique carving a harbinger of such a future.

How far has art developed in Tamil Nadu. How much westerners appreciate our art, could be seen in an incident. The Sivapuram Nataraja idol has not been returned to us. This goes to show how much love and affection the foreigners shower on our art. Whether it is a piece of wood carving, or done in gold or silver, the skill with which it had been created by our master-craftsmen, thousands of years ago is valued and treasured, admired and appreciated.

We see foreigners spending over thousands of rupees on our handicrafts. While I am fascsinated by this unique piece of wood carving, I cannot but help recalling the numerous figurines carved in the wheels and panels of the temple cars, the sculptures and carvings, some partly demolished, some uncared for, lying about in the numerous temples all over Tamil Nadu.

When I was in the opposition in the Tamil Nadu Assembly, I had pointed this out to the then Government. In those days, there used to be a practise of auctioning old temple cars.

When Thiru Bhaktavatsalam was the Chief Minister, I as opposition member, asked him under which Head of Account the Hindu Religious Endowment Board would be



FOR THE PEOPLE OF TAMIL NADU...

In the Republic of India, Tamil Nadu has always been renowned for its multifarious welfare schemes for the people. Each programme aims at bearing fruits for a particular vulnerable section of the society. Truly, the Government of Tamil Nadu is building up an egalitarian society. Tamil Nadu is a Welfare State.

MONTHLY PENSION SCHEME FOR THE AGED

A major portion of the public do not have any pensionary benefits. The Government, which has always been concerned with the welfare of the public, especially the lower salaried classes, has introduced a new pension scheme for them. Under this scheme a 30 year old person contributes a monthly amount of Rs. 10 and is entitled to a monthly pension of Rs. 100 from the age of 55 till death. Provision has been made for the refund of principal and interest to dependents in case of death.

SPECIAL FAMILY BENEFIT SCHEME FOR GOVERNMENT EMPLOYEES

A special scheme has been introduced in order to supplement the benefits available under the pension-cum-gratuity scheme. If an employee contributes Re. 1/- every month, in the event of death while in service, a sum of Rs. 10,000 will be paid to his family. In the case of an employee retiring on superannuation or demitting office for any reason, he will be paid back the amount contributed along with interest. This scheme is applicable to all Government servants including temporary and non-pensionable post holders.

SOCIAL SECURITY SCHEME FOR BETTER FUTURE

The Social Security Scheme, 1974, extends principle of Security in old age in return for a small and regular payment during the working life to the public at large. Wage earners and the self-employed, men, women and minor children, the young and the old, can participate in the Scheme. Seven types of subscription plans which are available. Rs. 10 per/-month for 25 years or Rs. 20/- per month for 20 years or Rs. 30/- for month for 15 years or Rs. 60/- per month for 10 years will in each case earn a monthly pension of Rs.100 to the subscriber. Even if death occurs soon after the subscription period is over, the monthly pension will be paid for 30 years. Those who desire to have a monthly pension of Rs. 100 can join any one of these four plans depending upon how much they can subscribe per month and for how long they can make regular subscriptions. Every good scheme serves more than one purpose. This Scheme is a piece of financial engineering designed to promote thrift, provide social security and increase investible funds. It is like a dam which uses water to generate power and thereafter, leaves it free for irrigating.

EMPLOYEE'S PARTICIPATION IN PUBLIC SECTOR PROJECTS

Nowhere in India, a scheme has been introduced, for employees' participation in ownership andmanagement in the public sector. The Governmentof Tamil Nadu has taken the initiative in pioneering this. To start with, the Government has introduced the programme of employees'participation in the equity capital of State owned Transport Corporations. The uniuqe scheme of providing incentives in the form of bonus has also been introduced in the Tamil NaduStateTransport Department. Bonus is distributed for collection, punctuality, attendance, performance etc.

The following is the full text of the speech of Thiru K. K. SHAH, Governor of Tamil Nadu, at the inauguration of the First State Conference of the Tamil Kavignar Manram on the 30th November, 1975.

Bring in once again Era of EPIC POETRY

—oOo—

GOVERNOR'S CALL TO TAMIL POETS

Mr President and Poets of Tamil Nadu

I do not know how I deserved your invitation to inaugurate the First State Conference of Tamil Poets. The great cultural heritage which you, poets of Tamil Nadu, can proudly acclaim is unrivalled not only in India or Asia, but in the whole world. You know my views on Tamizh. You know how I am struggling to remove the poison injected by politician-turned scholars about the difference of Aryans, Indo Aryans and Dravidians. **There are no languages in the world as old as Tamizh and sanskrit but Tamizh is the only language which has continued both as an ancient classical language and also as a common spoken tongue of the people, over an unbroken period of several centuries.** No language in the West has such a long history. Sanskrit has not continued as a spoken tonuge. Greek and Latin had ceased long ago to be the spoken tongues in their native homes. But I am proud to say that Tamizh still continues with all its prime vigour as a powerful language which can plumb the emotional depths of love and devotion, and rise to patriotic heights of selfless sacrifice for the cause of the Motherland.

I have spoken from several platforms that the habit of quoting foreigners to signify scholarship is a sign of weekness. Let us learn as much as we can. That is our culture but let us develop our own individuality. How can we accept the theory that sanskrit came from the West and Tamizh came from absoal ? From the East, being Scythian ? Is our civilizationmerely a few thousand years old ? Has any language developed as scientifically as Tamizh or Sanskrit ? Luckily evidence is mounting about our civilization being more than 10,000 years old. Once it is proved that ours is the oldest civilization, how can our languages be imported from outside.

Both Tamizh and sanskrit possess] common striking features which no two other languages of the world possess. Sanskrit owes a tremendous debt of gratitude to South. Shankara, Ramanuja, Madhva, Chola kings, Pandya kings and Chera kings have contributed immensely to its richness. Would they have adopted if sanskrit was a foreign language or did they look upon sanskrit as an improved version of Tamizh for the benefit of the whole of India ? (E. G.) Instead of writing consonant K and using it for K, Kh, g and gh, they invented separate consonants for k, kh, g and gh, etc. **Mohenja Daro-Harappa would have thrown up some evidence to support the contrived theory of some interested scholars. On the contrary, it lends support to the theory that Tamizh was prevalent throughout the whole of India. What I request is dispassionate research and honest conclusions.**

PROPOUNDS NEW WAY OF LOOKING AT HARAPPA

Madras Down the Ages—A City of Poets

You have rightly chosen Madras as the venue of your conference. This city has a long association with poets and poetry. Tiruvalluvar is said to have lived here in Mylapore and written his immortal Tirukkural. One of the 12 Alwars, Pey-Alvar, was born here and wrote his Third Antadi of the Vaishnava canon. The miracle of the young damsel Poompavai restored to life from her ashes was wrought in Mylapore by the Saivite Saint Tirugnana Sambandha more than 1300 years ago. The great poet-Saint, Pattinattar, lived here and attained mukti at Tiruvotriyur. Coming to our own times, Saint Ramalingaswami stayed in Madras and his simple and sweet poetical compositions constitute 'Tiru Arutpa'. Subrahmanya Bharati, the great Tamil national poet, the Bard of Freedom, lived, wrote and sang in Madras and died here. Thus you have a line of poets and continuous tradition of poetry in Madras city itself.

It is remarkable that in the Tamil language all writing up to the beginning of this century had been only in verse. Prose has been a vehicle for the communication of thought even from early times in Sanskrit. Prose and verse or champu had been the common form in the Telugu language. **Only in Tamil, do we have all writing in poetry. The fact that grammar, lexicon, astrology, medicine, architecture, sculpture and similar sciences are also written in poetry proves that Tamizh had developed as a perfect language long, long ago and was nearer to civilization just as poetry is nearer to humanity.**

Tamil Epics Indicate Love of Motherland Comes first with Tamils

Epistolatory verse forms a branch of the literature of the last two centuries. Kalidasa tells us that Sakuntala wrote to Dushyanta in verse form. Silappadhikaram tells us that Madhavi wrote to Kovalan in metric lines. Some centuries later, we have a reference to a note of introduction, said to have been composed in poetry by the Lord Siva Himself to the Chera prince, introducing a songster and asking him to help him. In recent times, many poets have sent their appeals for help to theirpatrons in the form of poetic epistles.

There is no branch of Tamil literature which does not contaiu inherent evidence of a highly developed language. Epics like Silappadhikaram of immortal age, Kambaramayanam and Periyapuranam of the mediaeval age and Panchali-Sapadam of Bharathi of modern age are all gems of purest ray serene. Tamil is very famous for didactic poetry—from Tirukkural down to Pudiya-Attisudi of Bharati. The devotional hymns in Saivism and Vaishnavism are vast and unparalleled in the World.

You have a convention that all epics devote two chapters in the beginning to the description of the glories of the land and of the capital city. You find this feature in all epic poems from Kamba Ramayanam down to the smaller poems of the last century. Puranas in the Tamil language are legion and all of them conform to this convention. Does it not indicate that the Tamil people have been living a full life, in tune with nature ?

What shall I say of Tamil Grammar ? Along with the Sanskrit grammarians, the Tamils are the only people who have scientifically studied the science of language—alphabets, words, syntax, poetic themes, prosody and rhetoric, all these, for the purpose of memorization, have been composed probably 2,500 years ago in verse form in Tolkappiyam. The earlier book Agattiyam has been lost to us. Every effort should be made to restructure it.

Another remarkable feature of Tamil poetry is that a poem is always intended to be sung. That shows that our taste for rythm and alliteration had so developed and that our poetry was intended to touch the innermost corner of the heart. It can be so only if it makes us muse. Even today all verses are sung by learned pandits. Even mendicants hum these songs in the streets.

Women Poets

This is the international Women's Year and it is but fitting we remember the place of women among the poets of Tamilnadu. We have had a galaxy of women poets of repute. Saintly women poets have enriched our cultural heritage. Avvaiyar is the most celebrated woman poet. Even crowned monarchs bowed before her. Avvaiyar today is a household word in this country and is remembered by her ethical maxims which have stood the test of troubled times. Karaikkal Ammaiyar and Andal are besides being women saints are great literary geniuses.

EARLIEST GRAMMAR OF THE WORLD IS IN TAMIL

It is the privilege of women to sing lullabies to children in the cradle to put them to sleep. Even today you all know our women folk are using hundreds of lines of the lullabies for this purpose in the melodious nilamburi tune. Some of them have learned the classical songs but there are others who improvise songs at the moment and sing. How many of us were lulled to sleep in our infancy by such creative genius ?

Richness of folk songs is yet another yardstick of a highly developed language. Folk songs of Tamil Nadu are replete with rhyme, assonance and alliteration. The Tamil language is rich in folk-song literature from very early times. There are any number of work-songs among rural folk. As we go along the country roads, in the early morning during the paddy transplantation period, we find music setting the pace for the transplanting work. A leader among the women engaged in the work sings a song and all the other workers follow in chorus. The singing relieves the monotony of the work and ensures quick and uniform execution of the work.

I am mentioning these to indicate how poetry and singing have been closely woven into the fabric of the lives of the people of Tamil Nadu from times immemorial.

Longest, Literary Tradition.

Poetry is something which the common man in the West shuns. What you call the man in the street does not like poetry and would always run away from it. A popular writer has remarked that poetry is the one word which will scatter a crowd more quickly than a hose-pipe, hornets, or the rumour of plague. The average lettered man there says that he does not read poetry. The picture is different in our country. Look at the engagement columns in our daily newspapers ! They are full of engagements of expositions of poetry such a as Kambaramayanam, Maha Bharata, Kural, etc. This shows

Tamils have the Genius for Listening to Poetical Expositions even to-day

that even today in the 20th century, there are people who can go on expounding poetry and there are many more who can listen for hours to the exposition of poetry. This is a unique tribute to the inherent poetic genius of the people of Tamil Nadu. Exposition of poetry in the West has only an academic value. Poetry there is found only in the classroom. But here in India, particularly in Tamil Nadu, large gatherings of people collect together for listening to the interpretation of poetry. This shows that the people of Tamil Nadu are a highly sensivite, emotional and cultured intellectuals.

Tamil drama occupies unique position in Tamil poetry. We know Shakespeare wrote his plays, directed them, and acted in most of his plays. But they were all dialogues, utterances by actors ; there were only occasional songs. Though whole plays were written in blank verse, they were merely spoken as prose and never chanted. The position is different in Tamizh. The greatest attraction about the Tamil drama is great most of it is in song. If it were prose, attendance would be very meagre in the theatres. The poems in the Tamil dramas are intended to be sung, they are indeed sung and the masses go to the drama and to the cinema, to listen to the verses and the songs that are sung.

All these indicate that poetry is in our blood. Whatever one wants to say, one tries to say it in song. No wonder Tamil Nadu has the longest literary tradition in the World.

Bharathi's Poetry

The era of modern poetry in Tamil Nadu can be said to have started with Bharati. He was the harbinger of the new wave in poetry in his day more than 55 years ago. He was soaked in the literary conventions and traditions of the ancient Tamil language. He chose some easy themes and elegant metres from and adopted them to the needs of the days of the grim struggle for freedom. He has sung on classical subjects such as devotion and mysticism, he has dealt with epic poetry and also ethics ; but we remember him today as the symbol of revolt against foreign rule, the voice of a new emerging resurgent India. The clarion call of freedom is seen in every one of his verses. His greatness lies in the fact that he took the spirit of a resurgent India through poetry to the masses. He adapted classical poetry to the common man and made him feel the urge and the elation of poetry. Only from his day did the writers begin to feel that even the greatest classic could appeal to the average man and poetry divored from the ordinary people, had no future. The Tamil people remember him with gratitude and affection for the impetus which his songs gave to the freedom struggle. The volunteers and freedom fighters fired by his immortal songs like 'Achham Illai' braved lathis and nullets with a smile. Bharathi's songs have still relevance as they can inspire us to work for our economic freedom and remove inequalities in society.

Pattimanrams of Present Day

Pattimandrams and Kaviarangams are very popular with our young men. Many young men participate in these literary gatherings. Some of them easily compose verses on the spot on given subjects to an eagerly listening and appreciative audience. The composer puts a lot of enthusiam in his utterence and adds illustrative gestures and the audience equally responds. Large responds. Large audiences for these Kaviarangams demonstrate their increasing popularity. This cannot happen unless our people have a natural poetic instinct which finds an echo in the poems recited. **How natural this instinct of expression in poetry is can be verified from the many addresses in poetry, both blank and metric, received by me as Governor]** The sentiments that they convey and the literary genius that they present are a high mark of literary perfection.

THE UNIQUE INSTITUTION OF PATTIMANRAM

Poetry and The Common Man

Our ancestors, the Naranmars and the Alwars prayed to God in exquisite tunes, composition of high literary achievements. Even grievances and petitions are presented in verse. Are they not more effective and telling ? To us it is natural to offer blessings in verse. Newly married couples are offered framed addresses in which the Almighty is invoked to bless them with long life and prosperity. Even the marriage invitations are sometimes in verse. There are others who sing welcome addresses in verse and recite their vote of thanks in verse on the spot.

It is uncommon for friends and close relatives to write elegies in verse on the death of dear and near one or on a popular personality on the spot. Some of them have high literary value and are preserved as rare collections.

Puns, conundrms and riddles are an integral part of our classical poetry. Kalamegham and Irattaiyar are outstanding examples of mastering in this important limb of effective poetry. One of the most effective ways of lingering in the memory of others is to use this art effectively.

Even advertisers use verses as their medium for attracting public notice. Hawkers and pedlars go along the streets repeating some kind of rhyme to attract purchasers for their wares. Just as democracy can succeed only if it becomes a mode of living, poetry can survive as an immortal mode of expression

HOLD ALOFT THE PURITY OF TAMIL EVEN IN THE FACE OF THE WRATH OF GOD

if people maintain high intellectual calibre and inspiring emotion and decent taste. Any one with this urge can have entrance into the great brother-hood of poets. Poetry is the real integrating force in a nation. Poetry does not know caste or creed, class or sex. Harijans had been devotional poets throughout history in this land and some of them like Tiruppanalvar are hailed as great saints. In the same way who does not know Tiruvalluvar ? No high caste appendage was necessary for him to be hailed as an outstanding saint. Ruling kings have been known as renowned poets. Poems of some of them have been included in the Saiva and Vaishnava Canons. Jains have been great grammarians and ethical writers. Bhuddhists had also written epic poetry and grammar. On the impact of the Crescent and the Cross, we are having substantial Muslim and Christian poetry respectively. A lady from Cuddalore, Pandit Asalambikai, I am told, had sung during the first quarter of this century the lives of Tilak and Gandhi as a kind of the metrical purana. Physical handicap is no bar to poetry Many blind persons have been eminent poets ; the two poets who goby the name of Irattaiyar (the cople) have been lame and blind. **The gift of poetry transcends all wordly barriers and makes a real poet, respected and adored.**

Heroic Traditions

Tamil Nadu poets are renowned for independence and fearlessness. The story of Nakkirar is an inspiring saga of bravery. When a purse of gold was to be presented to the young bachelor Dharmi in the Pandiya court, the legend says that the poet Nakirar intervened and stopped the presentation of the purse, saying that the verse brought by Dharmi was wrong in content. He said that the hair of damsels was not fragrant by nature, but only the association of flowers imparted fragrance to it and so the verse which attributed natural fragrance to a lady's hair was faulty in content. When the author of the verse zappeared in person as Lord Siva Himself and showed his anger at the affornt of the poet Nakkirar, he would not flinch. He braved the wrath of God Himself and defied Him when it came to a question of holding aloft the literary merit of Tamil. Really heroic, is the tradition of Tamizh poets.

Before I conclude, I wish to dilate on the function of poetry. Poetry is Nada Brahma. Shabha or voice becomes powerful vehicle of emotions when it is in verse. Music is scientific in content and immeasurable in strength. Melodious music represents utmost harmony in nature. Expressions in verse become power as they acquire harmony Once this harmony between thoughts as well as in expression is acquited, it acquires tremendous power and moves the innermost chords of human beings. These chords vibrate and produce indissoluble ecstasy. When emotion and rhythm combine, nature yields its secrets. That is the prime function of poetry. It is a source of joy and perennial inspiration.

Poetry enshrines Discipline

Another equally important function of poetry is the ineluctable ethical code which it lays down. Without such a code, the coherence in any society cannot last. Poetry being harmonious reveals harmony of nature which is nothing else but ethical code of conduct. And that code gives man lasting peace and a faith and a strength to face life's problems. This code is nurtured by poetry to preserve the emotional integration of humanity and nature. **Tamilians have excelled in perpetuating this exquisite art of establishing harmony and preserving the innate basis of truth, love and affection on which humanity survives.** Thus cultural heritage is a vast reservoir or inspiration. Let us be worthy of this heritage and transmit vibration of that heritage through immortal compasitions like Tirukkural for curing the ailing humanity.

TAMIL POETRY IS VEHICLE OF DISCIPLINE

Poetry for Peace and Fearlessness for Facts :

Let your motto be Peace—Poetry for Peace. Man has landed on the moon. He is now trying to probe Mars. No one can foresee if it cannot be proved that life existed on the Moon and Mars. Man thus is able to conquer new realms. But men has not conquered himself. He does not know how to love his next door neighbour and live at peace with him. When he is unable to develop this attitude of what avail is space-conquest ? Hence it is the great and sacred duty of the Poets of today the world over to propagate the gospel of Peace. Nuclear weapons pose a threat of total devastation. Poets endowned with imagination, certainly do have the wisdom to foresee what is coming. Now it is up to them to visualise the future and appeal to the peoples to tread the path of Peace.

I would like to share with your another fundamental thought. Mere lyrical poetry does not make a nation's poetry great. It is only long narrative poetry, which is sustained and which brings out all the inventive and creative genius of the nation, that makes for great poetry. Only such poetry can lay claim to classicism and only that can secure for you a lasting place in the great commonwealth of poets. I do appreciate your efforts to write lyrical Poetry out of an inner urge and an occasion demands. Yet, you should also keep great poetry an view. Generally what has been written is only in the nature of minor poems.

Aim at great epic poetry. Some day, out of all such attempts may perhaps be born a poet of the stature of Kamban.

Let me conclude with the words of Tagore. " May your minds be without, fear, and may you hold your head high." May your poems help to enrich Tamil literature.

I have now great pleasure in inaugurating this First State Conference of Tamil Poets. **

Psychiatry is an Integral Part of our Life and Social Discipline

INDIA CAN GIVE NEW MEANING TO THIS BRANCH OF MEDICINE TO BENEFIT WORLD

GOVERNOR'S CALL AT FORMATION OF PSYCHIATRY ASSOCIATION

While inaugurating the Indian Association of Psychiatrists at Madras Medical College on 1—12—75 Thiru K. K. Shah, Governor of Tamil Nadu said : I am indeed happy that the number of psychiatrists in Tamil Nadu is increasing. Now there is no longer any need for them to go to other States for Post-graduate training in Psychiatry. The Madras University and Madurai University have already started training courses in Psychiatry and Diploma in Psychological Medicine. There is M.D. Course in Psychiatry in Madras ; in addition, the Christian Medical College, Vellore, admits students for Post-graduate Diploma Course. I am glad that Psychiatric clinics have started functioning at the teaching Medical Colleges of Madras, Coimbatore, Thanjavur and Tirunelveli and in the non-teaching district Headquarters Hospital of Tirichirapalli, Salem, Cuddalore, Nagapattinam and Vellore. I feel confident that the remaining districts will take no time in having Psychiatric out-patient facilities. I do hope that this Association which is being newly formed, will promote the study and practice of Psychiatry throughout the State in a phased manner.

Let me, at the outset, draw a line of difference between Psychiatry and Psycho-analysis. Psychiatry is a branch of medicine devoted to the study of the genesis, diagnosis, prevention and treatment of emotional illness and mental disorders whereas Psycho-analysis is an analytical study of the circumstances and factors that have contributed to the mental and emotional disorders of a patient and either preparing his mind for necessary adjustments or correcting his surroundings to restore balance of his mind.

Our Religion is Psychiatry

A question is naturally asked as to why Psychiatry is not so popular in India as it is in advanced western countries. The answer is straight and simple. Psychiatry forms an integral part of our religion, daily life and social discipline. It is so ingrained in us that it has become a habit. It preevents many of us from being willing victims of the evils of material civilisation without knowing what we are doing. We are treated every day by these religious beliefs and social customs and are made to practise the art of stilling the mind as part of our spiritual discipline, since the hoary days of our ancient civilisation.

If today our Yoga system with all its emphasis on mind control has attracted the entire world, it is because it has established and proved its superiority over Psychiatry and Psychoanalysis of the Western type. I do not wish to elaborate this point further because it is common knowledge. I shall, therefore, confine myself to the subject of Psychiatry. **I must, however, admit that, if the scientific facilities of the West become available to us to explain the wonderful curative, preventive and promotional aspect of mental health that the asanas and pranayam bring about, it will open vast vistas of human happiness.**

It is estimated that about 1 1/2 crores of people in America are suffering from emotional conflicts and that they are seeking the help of Psychiatrists for remedy. It is the Psychiatrist who studies the patient's joys and sorrows, hopes and fears. It is his professional duty to find out what sort of patient he has got just as it is important for him to find out what sort of disease the patient has. A Psychiatrist is confronted with the problems of personality, maladjustments, fears, sexual maladjustments, mental incongruities, mental depressions, alcoholism, inferiority complexes and nervous breakdowns. Freud believed that neurotic behaviour stemmed from sexual conflicts. Alfred Adler explained human behaviour with his WILL-TO-POWER theory claiming that every human being strives to overcompensate in one way or another for his basic feelings of inferiority. Carl Jung emphasised man's need for religion as a cure for mental imbalances. It is the conviction of Psychiatrists — and I agree with it — that by learning to understand ourselves by cultivating consciousness, our ability to control our fears and anxieties increases and we develop an urge to be unselfish, and ultimately achieve peace of mind.

Anxiety Neurosis :

It is now admitted that greater the anxiety, greater the strain on brain. Greater the craze for change, greater the pressure on brain to adjust to every changing circumstance. Human beings do not realise that change of habit casts a strain on mind unless the mind is trained to adapt without strain. It is a good development that scientists have in their quest for human happiness are turning to the basic concept

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of religion which is common to all religions. It provides excellent opportunity for them to examine the beneficial effects of several practices to control the mind, cultivate detachment and ultimately enjoy mental peace. **They are agreed that Prayer and Devotional music are therepeutically proved to be possessive of tremendous healing and comforting powers. Music, according to our ancient theory, has a wonderful therepeutic value.** Modern science has tested its efficacy on plants and human beings. That is the reason why our Indian music is becoming more and more popular in the western countries just as our Yoga system is attracting a lot of adherents. We are now entering an era of generating energy through vibrations which are converted into light and vice versa.

As Herbert Spencer said, " it is the Mind that maketh good or)ill, that meketh wretch or happy, rich or poor." Today, the external pressures on the mind of each human being are becoming so heavy that unless he looks within himself in search of some new strength or new wisdom to meet the challenges, he cannot survive for long. Harold Sherman rightly says " Man creates in mind the world in which he lives.', Does this not demonstrate a perfect agreement with the theory of past life (Purva Janma) influencing the present life. Does not it accept the belief that life is a fight between Destiny and Divinity ? Does it not prove that all happiness and misery spring in mind and that unless you practise the art of controlling those springs, you cannot have peace ? That is why the Rig Veda says "*Ano Bhadrah Kritavo Yantu Vishvtaha*". That is why Lord Krishna in Bhagvad Geetha preached Karma Yoga. Scientists all over the world are now on the way to the acceptance of Karma theory. They are now convinced that genetics)are the source of many things and that the genetics are pre-ordained. In fact they go to the extent of saying that chance or luck does not exist in a universe which is ruled inexorably by the laws of cause and effect.

Discipline & Detachment :

Yama and Niyama which mean control and discipline are nothing else but mental exercises. We are practising physical exercises without training the mind which is the source of all ailments. Prayer is an attempt to draw strength from Yama and Niyama. That is why the famous Psychiatrist Dr. Simley Blanton whose article appeared in Readers' Digest some time back pleads for prayer and advised thousands of patients who had gone to him to practise Prayer. He says " In prayer, whatever the creed or denomination, one accepts the concepts of a Creator, who is the source of life and to whom one can turn in humility and trust. Here again the surrender of self is the indispensable attitude. " Not my will, but Thine be done." When this attitude is truly dominant, the results can be astonishing. Whether you choose to call it mobilising the unconscious or making contact with God, prayer is a channel through which enormous power can flow." What else is this but our Bhakti Yoga ? It settles the mind and establishes contact with your Creator. If the concepts of Shabda Brahman and Nada Brahman are understood, Psychiatrists will find a new method of treatment. It rests on the theory of your mental vibrations being immortal, wandering all over the world, ultimately grouping together and acting on your mind which has the same frequency as the group of vibrations which are yours.

THE PSYCHIATRIST MUST HEAL WITHOUT HURT

Qualified and experienced Psychiatrists who handle patients have to bear in mind that even if it is not possible to preventdistrubances, the patient must be taught the art of minimising its pressure and accommodating its existence. The principle he follows is that we cannot stop rain but we can protect ourselves from it. No one can know that this own behaviour shows him as a neurotic or is filled with too much of self-love called Narcissism. He may feel unhappy that he is not getting on well in society or is not popular with people. It is given to a Psychiatrist to make him conscious of these traits without hurting him and make him realise that these traits are responsible for his unpopularity or for his losing friends. That applies to every trait in excess —Selfishness, Sarcasm, excessive health-complaining, conceit, frugality, over-aggressiveness, stubbornness, excessive criticism, shifting moods, unreasonable jealousy, emotional immaturity, vulgarity and bad manners, iIritability, over-sensitiveness, excessive shyness, dishonesty, argumentativeness, untidiness, tactlessness, bad temper, lack of appreciation and unadaptability —these traits have their own reactions. It is for the Psychiatrist to measure their proportion, devise methods of balancing them and inspire the patients to transform or replace or counterbalance them.

Poverty and Mental illness

Most of the mental illnesses in a poor country like ours can be traced to grinding poverty and lack of suitable employment opportunities. Sometimes, a Psychiatrist cannot suggest remedy. In suc chases he must wisely analyse variousfactors of the mental illness of a patient and give him hope and encouragement. This is not a very easy task. It requires enormous patience, tolerance and a helpful attitude. I do hope that this Association which I now have the pleasure of inaugurating, will plan out new paths in the study and practice of Psychiatry and combine them with our age old wisdom enshrined in Yoga. You must always remember that our indigenous systems of medicine and Yoga are perennial sources of wisdom and inspiration. Draw as much as you can on them. They will not fail you.

You have my best wishes.

Help people keep Mind Clear

Health Minister Tells Psychiatrists

PEOPLE MUST BE PREVENTED FROM RESORTING TO ILLOGICAL TREATMENT OF MENTAL DISORDERS

Thiru K. S. Bhushanam, President of the Association in his welcome address observed that though modern science had advanced very much, psychiatry and psycho-therapy have still to make an impact on the common man. People not only in the villages but many in the cities also held on to various vague beliefs such as the existence of evil spirits controlling body and mind. As long as this state of affairs existed, the patient with mental illness would not be considered as having a disease, which could be treated but would be considered as having been afflicted by the "devil." Therefore illogical methods in an effort to drive out the so called "devil" were being practised in various parts of the country. As such he pleaded for wider publicity being given not only for the recognition of mental illness wherever it occurred but also for the spread of knowledge regarding the availability of psychitaric help.

Health Minister's Speech

In his Presidential address, the Hon'ble Health Minister, Prof. K. Anbazhagan stressed the fact that a man is differentiated from the animal world only by the fact that he possesses a mind and can reason with it. **As such, the mind had to be kept free from confusions which directly resulted in mental diseases. Stating that a wide variety of reasons were responsible for the production of mental illness or diseases, the most important aspect of any disease was the study of the mind which was highly sensitive to a reception of ideas, attitude, behaviour, people and to the environment.** As such, the mind had to be kept in a clear state to prevent diseases or illness. It was towards this end that people in the olden days resorted to meditation, prayers and various other means which in later days tended to be abused with overtones of superstition. Observing that modern medicine did not fully cater to the requirements of the mind which got disturbed even during physical illness, he pointed out that in the ancient systems of Indian Medicine, this fact was recognised by the early Indians. The Siddha system of medicine, was unique in that, it took into consideration the fact that the mind had to be nurtured as carefully as the body was being tended. The Minister commended the practice of Homoeopathy and advised medical graduates of allopathic medicine to study the effects of various drugs obtained in the Indian systems of Medicine and put these into use in their day to day practice. He made a special plea for the study of the effects of various herbs and other indigenous medicines in order that they could be made use of. Even accupuncture, he stressed, originated in India but came to be refined in other countries and was making a come-back as a sort of "imported stuff." As proof of his thesis he pointed out that some traditional practitioners of acupuncture could still be found practising in parts of Tirunelveli District.

ELECTRONIC ACUPUNCTURE

An electronic device by two scientists has been jointly developed by Dr. Mathew George, orthopaedic surgeon of the Ernakulam General Hospital, and Prof. M.N. Nampoothiripad of the Department of Electronics of the local St. Albert's College, which not only kills pain but obviates the use of expensive drugs and antibiotics.

Experiments conducted on about 200 patients at the General Hospital so far had yielded "wonderful and encouraging results" in killing pain as well as curing orthopaedic complaints like backache (lumbago), neck pain (spondilities), shoulder pain (periarthritis), knee pain (ostio-arthritis) and the like.

The scientists have named the therapy as "mycrolytic therapy" since it involves electrolysis with a very small measure of current obtained from a dry cell battery. The idea has been derived from the Chinese acupuncture treatment. In acupuncture, electric charge is generated while rotating the needle slowly during insertion into the body.

A searching electrode current of the order of 150 microamperes is applied and points where there is pain are located by the electrode and the measuring meter which is part of the instrument. The experiments are still going on. So far no untoward reaction has been found.

Perhaps this is the only instrument, which monitors the operation visually as well as audibly. All the components used to the sleek and attractive prototype are indigenous as also its design. It costs a little over Rs. 1,000 and can be carried in a brief case.

PROPER COUNSELLING THE NEED OF THE HOUR

We have to look around ourselves and see the plight of our friends and ourselves to be convinced of the fact that human energy is wasted, lives are misspent and misery results from the lack of direction and from the unwise selection of educational opportunities, of recreation, of occupation, of companion and of spouse. Having made a wrong selection, one stands bewildered and perplexed.

Need for Guidance :

A considerable variety of problems and difficulties are experienced by young people, who do not have any source of guidance to find answers to the questions that arise in their minds. The difficulties may be intellectual, arising out of some conflict or contradiction between what they believe and what they hear or see being practised. These may generate doubts, undermine their confidence in themselves or their faith in society. Some times the difficulties may be emotional, arising out of failure to understand how to adjust their feelings and emotional reactions to the demands of their parents, their teachers or their fellow students. The emotional problems may even be deeper, arising out of maladjustments in social life, or in relationships with other people. A third group of difficulties may be in relation to their future. The adolescent is conscious of the fact that he is growing up. He is inevitably assertive, and resistant to parental authority. This resistance may become generalised to even other forms of authority such as the school , the college, the police and the like. There are other factors like the complexity of the society, individual differences, economic disparities, rapid industrialization, urbanisation, technological advancements with their concomitance, employment of women in large numbers, religious and caste prejudices, rapidly increasing population, broken home, changed family pattern, lack of guidance at home, and the realisation of the inadequacy of class room instruction to meet the extra-instructional needs of the students, warrant the need of a guidance programme.

Various reasons have been given in order to highlight the need of guidance. Many critical situations arise in our lives when important and far-reaching decisions should be made and it is very necessary that some adequate help is provided in order that these decisions may be made wisely. We have to look back to ourselves to find the strange paths we have adopted to get to our present professions.

Types of Guidance :

Various authorities have given their classifications. According to Peterson, Williamson and others there are five types of guidance.

1. Educational guidance.
2. Vocational guidance.
3. Personal guidance.
4. Health guidance, and
5. Economic guidance.

Jones in his book " Principles of Guidance," lists six phases of guidance. He calls those as :

1. Vocational guidance.
2. Course, curriculum and School guidance.
3. Civic and Moral guidance.
4. Social guidance.
5. Leisure time and Vocational guidance.
6. Leadership guidance.

Purposes of Guidance :

Erickson has listed six important purposes of Guidance :

(*a*) Careful study of individual.

(*b*) Informational Services.

(*c*) Counselling.

(*d*) Placement and Follow up.

(*e*) Assisting the teachers.

(*f*) Coordination.

It requires a volume, to write on the benefits derived out of a guidance programme. To be precise, the definition given by Traxler and North serves the purpose. They observe, " Ideally conceived, guidance enables each individual to know his abilities, interests and personality traits, to develop them as well as possible to keep them flexible in order to meet the demands of a fluid environment, to relate them to his life goals and to clarify these goals, and finally to reach a state of complete and mature self guidance as a desirable citizen of our democratic social order and of the world."

Benefits of Guidance Programme :

Psychological counselling for the youth aims at the achievement of integrated personality in the youth, enabling him to see that much of what society expects of him, is for his own good and that in essence what is good for others is good for him too. The enlightenment of conscience is thus insseparable from the integration of personality in youth. A constructive programme of youth counselling will thus include actions, individual as well as collective, which promote the common good and foster in the mind of the youth, a desire to engage in socially useful activity. It cannot be forgotten that today, under conditions of modern social life, the problems of the teenager are coming more and more to the forefront.

Hence it is but incumbent on us to realise fully that the need of the hour is to have a psychological counsellor in every educational institution.

By

G. RAJ MOHAN

M.A., D.G.C., D.H.M.S.,

THE INSTITUTE OF NEUROLOGY

MADRAS

India, on the threshold of Independence had drawn up plans for the economic and social development of the country. Technology and Science were given priority. Medicine got its due recognition and many medical officers were sent abroad for training in specialized fields.

The Government of Tamil Nadu, known to have many " firsts " to its credit in the various fields, was the first to take credit for starting the speciality in brain surgery in the country as early as 1950. Even at that time, the Government of Tamil Nadu embarked on a policy of expansion of medical facilities, selected medical officers to go abroad for training in various specialities. One such was brain surgery, for which a trainee was deputed to U.K., *viz.*, Dr. B. Ramamurthi.

Until 1950, surgery of the nervous system was practised only to a very small extent in the General Hospital. However, on his return in 1950, Dr. B. Ramamurthi was asked to organise a separate neurosurgical unit. With only ten beds and one half of an operation theatre made available to him, one day in a week, the Department of Neurology and Neurosurgery has now grown into an imposing multi storeyed complex, achieving international eminence.

The neurology institute houses the neuroradiology section. Neuropathology, EEG, EMG, Echoencephalography, Isotopearadiography, Neuro-chemistry etc., a well-equipped library, a well maintained museum, auditorium etc. The nerve centre of the building are the two main operation theatres, the Intensive therapy ward and the E.E.G. and E.M.G. rooms.

All modern diagnostic and operative facilities have been provided.

Today it is well known for the :

1. National and international character of patients with neurological illness.
2. The highly complicated and modern operations that are being performed.
3. The Post Graduate courses of training in surgical and medical neurology.
4. The quality of scientific papers presented at National and International meetings and published in various journals.
5. The research work undertaken under the auspices of the Madras State Research Committee, Indian Council of Medical Research and P.L. 480 funds.

The department has also the following to its credit :

1. The first E.E.G. (Electro-encephalograph) machine to be brought into the country.
2. The first to start P.G. courses in neurology and neurosurgery.
3. The only head injury centre in the country.
4. Intensive and extensive work in the field of stereotaxic surgery, *i.e.*, depth surgery of the brain, which has attracted the attention of workers in the field in Japan, the U.K. and U.S.A.

Extensive basic research is being carried out in the various laboratories. In the neuropathology section, brain tumours have been induced by clinical methods in nearly 300 mice for the first time in India in a strain of mice not used for such experimental purposes before. This work is expected to add current knowledge in the causation of the production of the much dreaded disease, cancer ; another field of work where much research has been done in this section is in the field of neurotoxins. A **detailed study of the changes in the brain in toxins, such as organophospharon, oleander and methyl alcohol poisoning has been made.**

Yet another field of work where newer knowledge has been gained in the study of changes in the brain in head injury. Knowledge gained in these areas has afforded considerable help in the diagnosis and management of patients with head injuries.

These constitute a few examples of the work that is carried on in the Institute in which progress appears to be the byword.

The late Dr. A. Lakshmipathi denoted a sum of Rs. 1.80 lakh for the Neurology block, and the block has been named after him. The Government of U.K. has donated equipment worth £ 30,000. The U.S. authorities under P.L. 480 and the Indian Council of Medical Research are helping by generous grants for research.

It was due to the keen interest taken by the then Chief Minister Arignar Anna, that the construction of the block was taken up. This farsighted decision was made possible by the keen enthusiasm shown in the project by the present Chief Minister Dr. Kalaignar M. Karunanidhi, who was the Works Minister at that time.

Posterity will remember for ever these three stalwarts (Dr. Lakshmipathi, Arignar Anna and Dr. Kalaignar) who made a dream come true and today, Tamil Nadu is in the forefront in the advancement in the Neurological sciences. —**R.B.**

MADRAS NEUROLOGY INSTITUTE HOSTS INTER NATIONAL SCIENTIFIC MEET ON ITS 25TH BIRTH DAY

Resume Furnished by :

DR. R. SARASA BHARATI, M.D., F.I.C.A.,
Professor of Neuropathology,
Madras Medical College

and

Neuropathologist
Registry of Neuropathology
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The Madras Institute of Neurology celebrated its 25th Anniversary by holding an International Scientific Meet at which several papers of scientific value were read and discussed. In addition to the Scientific Congress the 10th Annual Conference of the Middle East Neurosurgical Society was also conducted at the same time, under the patronage of the Hon'ble Chief Minister of Madras Dr. M. Karunanidhi, the Hon'ble Prof. K. Anbazhagan, Minister for Health and Hon'ble Dr. Nedunchezhian, Minister for Education between 10th to 12th November 1975. The inauguration which was held at Rajaji Hall was marked by an impressive and illuminating ceremony at which 57 foreign delegates from abroad, many with their families and 65 Delegates from many parts of India, participated.

Talented Staff

Dr. B. Ramamurthi, Head of the Department of the Institute of Neurology, Madras Medical College, while welcoming the delegates and other participants, indicated that it was a special achievement on the part of the Institute of Neurology to have not only completed 25 years of useful service to patients but also to have made significant contributions to academic knowledge. The nearly 700 papers published by the various staff members of the Institute testified to the academic achievements of the Institute. He added that it was a matter worthy of note that a large number of trainees in this Institute had not only gone to several parts of India but also to many countries in the world. He was particularly grateful to the enlightened Govt. of Tamil Nadu for having given all facilities for the development of this Institute.

Dr. Willem Luyendijk (Netherlands), Dr. Watanabe (Japan), Dr. Sorour (Cairo), Dr. Taptas (Greece), Dr. J. B. Foster (United Kingdom) and Dr. B. Pertuiset (France) and Dr. Kelly (United Kingdom) congratulated Dr. B. Ramamurthi on his pioneering efforts in the field of Neurology in India and extended their greetings and good wishes. Dr. P. N. Tandon (Delhi), Secretary, Neurological Society of India reviewing the contributions made by Dr. B. Ramamurthi towards establishment of the Institute observed that in him, young surgeons had a glorious example to emulate.

Dr. N.O. Ameli (Teheran) giving the inaugural address of the 10th Annual Conference of the Middle East Neurosurgical Society recalled that several thousand years ago, Teheran had sent some of their own Doctors to India to learn from the Indian Scientists and also had caused translations of several Indian books of scientific value to be carried out and brought back to Teheran.

Inaugurating the Silver Jubilee Celebrations of the Institute of Neurology, Dr. M. Karunanidhi, Chief Minister of Tamil Nadu observed that in the medical field, Madras State had always been in the forefront of service and teaching. Though 25 years may not be a long time in a nation's history, in the development of science or a man's life, it could be used as a span to measure achievements. He further observed that the growth of advanced specialities of Medicine and Surgery had been commendable in Madras because of the interest and enthusiasm shown by the medical scientists here with the close help and cooperation of the public and the Government. One speciality which developed early had been the speciality of brain surgery and Neurology. The set up of the Institute was largely due to the far sightedness of Agrignar Dr. Anadurai, Former Chief Minister of Tamil Nadu who in fact was mainly responsible for the creation of the Institute.

Chief Minister's Tribute

The Chief Minister was particularly happy that the Institute of Neurology over the years had contributed to the development of Neorology and Neurosurgery not only in the City but also in the whole of Tamil Nadu. He further observed that the uniqueness of the Institute lay in the fact that it housed all the different disciplines of Neurological Sciences under one roof.

The Chief Minister commended the energy, enthusiasm and dynamism of Dr. B. Ramamurthi, which were directly responsible for the growth and development of a small unit into an Internationally famous Institute of Neurology. He congratulated Dr. B. Ramamurthi and his colleagues on the excellent work that had been done over the past 25 years and wanted the delegates who

had arrived from all over India and the rest of the world to make their discussions purposeful and successful.

Prof. K. Anbazhagan, Minister for Health in his prsidential address congratulating Dr. B. Ramamurthi and his staff for their excellent work but for which the Institute could not have either grown or obtained an Interational reputation, pointed out that the arrival of a large number of foreign delegates to the Institute showed the esteem in which the Institute was held by Neurologists the world over.

Dr. M. Natarajan, Principal, Madras Medical College, Madras proposing a vote of thanks observed that the number of publications that have come from the Institute of Neurology was easily the highest in any particular Department in the Madras Medical College.

The scientific sessions got off to a fine start with an excellent presentation on direct surgery of intracranial aneurysm by Dr. Suzuki of Japan who had operated on more than 100 cases of such aneurysms. 12 scientific sessions spread over 3 days were held in different halls simultaneously, where over 50 papers were presented and discussed at length. The feature of this meeting was that the presentation of the various papers were made exclusively by delegates from abroad and the sessions were chaired by notable Indian Neurologists.

Trigeminal neuralgia a condition in which intense pain is felt in various parts of the face by a patient as a result of disturbances in certain nerves, was discussed at length by Dr. Voris from the U. S. A., and Dr. Petty from Australia.

Dr. Walsh, Neurosurgeon from the United Kingdom gave an interesting talk on a subject of current interest " Spasmodic Torticollis " i.e. abnormal movement of the head and neck.

Psychosurgery and Schizophrenia, Stereotaxic surgery and Parkinsons disease (Shaking palsy) and various newer techniques in operative procedures were also considered and well discussed.

Useful and sometimes elaborate discussions followed the presentation of each paper and newer ideas newer knowledge and newer methods of approach in the diagnosis, management, surgery and treatment of patients were obtained. An additional feature was the discussion on certain diseases peculiar to the tropics. An useful suggestion was made by Dr. Adoylye from Nigeria who indicated that a symposium on Nervous diseases of tropical interest would benefit most of them.

An important part of the meet was a Symposium on Neuro Traumatology held under the auspices of the World Federation of Neurosurgeons which was chaired by Dr. O. Sorous of Egypt. The problems in the fields of Head Injury and Spinal Cord Injury were considered at length and the basic aspects raised intracranial tension and other similar important facts were discussed in detail.

A very exciting film on Microneurosurgery, a technique which involves the use of the microscope to tie up delicate blood vessels in the brain was shown by Dr. K.K. Jain of Switzerland.

On the last day of the Conference the Delegates visited the Institute of Neurology and were taken around the various sections such as Electroencephalography, Electromyography, Neuropathology, Neurochemistry, Neuro-Radiology, Neuro-Ophthalmology and Neuro Physiology. The research work done in these various sections in adition to those in Neurology and Neurosurgery were observed and appreciated by the delegates.

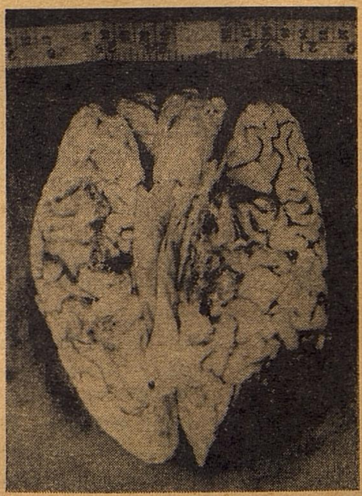
The concluding sessions was marked by an exceedingly thought-provoking lecture on ' The Place of the Academic Unit in Neurosurgery " by Dr. R. Kelly (U. K.), Dean of the Institute of Neurology, Queen's Square, London who observed that the features indicated in his lectures were already available in the Institute of Neurology, Madras and thus the Institute had not only chalked out a place for itself in world Neurology, but in fact had become an outstanding example for other neurological centres to follow.

The Institute Day Oration was delivered by Dr. P. N. Tandon in which he drew attention to the enormous difficulties and handicaps faced by the Neurosurgeons and Neurologists in India despite which much had been achieved.

The Delegates who were feted well were also given useful souvenirs to carry away as momentos of their visit to the Madras Institute of Neurology.

Head Injury with Cerebellar Haemorrhage.

Head Injury with bleeding over The Brain.



Kodaganar Reservoir Scheme of Madurai District

Means Water for the "dry" taluks of a fertile district

The Kodaganar reservoir scheme in Madurai District has been completed and awaits formal inauguration.

The surplus waters from the Kodaganar river used to overflow into the Amravati. A major portion of the Kodaganar, traverses the dry areas of Dindigul, Vedasanthur and Karur. If this heavy flow were arrested and utilized for irrigation purposes, additional acres could be brought under cultivation. The agriculturists of Vellianai were clamouring for a reservoir, so that they could irrigate their dry lands. This long felt need of theirs has now taken shape into the Kodaganar Reservoir.

KODAGANAR

The river Kodanagar originating from the Eastern slopes of Tower Palani hills, runs through Dindigul Vedasandur Taluk of Madurai district towards North and traverses in Karur Taluk, Tirichi District and finally joins with Amaravathi near Karur town. The length of the river is about 109 K. M. (68 Miles). It runs through the dry area of Vedasandur and Karur Taluks. The hydrology of the river has been examined earlier and few proposals for utilising the lows have been framed.

The total catchment area of the river is 2,173 Sq. K.M. (839 Sq. Miles). The catchment area of the river is influenced by both South-west and North-east monsoon. The river floods during October and November. After November, the flow dwindles down and upto May the flow is meagre not to speak of uncommon floods. The catchment area of the river is included by the rainfall stations at :—

1. Kodaikanal
2. Dindigul
3. Vedasandur and
4. Aravakurichi.

Existing Irrigation :

The river has fourteen anicuts along its run. They have got a direct ayacut of 1,310 H.A. (3,236.15 Acres). The impounding of water by Kodaganar Reservoir scheme will not affect any lower down irrigation interests as there is a heavy surplus of water available in this basin after meeting its requirements for its registered ayacut.

History of the Scheme :

The People of Vellianai, Karur Taluk were repeatedly requesting for the implementation of this scheme. The Scheme has been finalised after detailed investigation.

Scope of the Scheme :

The Scheme provides for formation of a Reservoir besides excavation of two canals, one on either side with sill at 195.00 M. (639.8 Ft.) to irrigate a new area of 2,080 H. a. (5,140 acres), to bridge a gap of 144 H. a. (356 acres) and to assure supply to an existing ayacut of 331 H. a. (819 acres).

The ayacut benefitted districtwise are as given below :—

	New	*Gap.*	*Stabilisation.*
Madurai District.	2,230 Ac.	..	..
Tiruchi District.	2,910 Ac.	356 Ac.	819 Ac.
Total :	5,140 Ac.	356 Ac.	819 Ac.

Hydrology.

Rainfall :

The catchment of the proposed reservoir is influenced by North-east and South-west monsoons and there are four rainfall stations. Out of which three are within the catchment area and the other one is near the catchment area. The dependable yield for all the rainfall stationed as per dry damp-wet method was prepared and the same is adopted for yield computation.

		Average comchment.
1. Kodaikanal	..	0. 18 M. Com./ Sq. K.M.
2. Dindigul	..	0. 10 do.
3. Vedasandur	..	0.064 do.
4. Arvakurichi	..	0.062 do.

The surplus from Kodaganar at the confluence point of Amaravathi river, after meeting the requirements of existing cultivation at a duty of 6 Acres/M. Cft. is 54.9 M.

Cum. the quantity required for the existing ayacut under the Amaravathi channel below the confluence of Kodaganar is about 35.67 M.Cum. for 7,559 acres. By assuming that half of the requirement would be met by the flow from Kodaganar and also taking into account the new proposal as for 7.41 M. Cum., the net surplus is 29.08 M. Cum. The selected site is just near Alagapuri Anicut, the twelfth anicut in the river. Allowing 7.41 M. Cum. for 3 Minor works under execution and three other minor schemes under consideration in the higher reaches, the balance yield available for utilisation is 21.6 M. Cum. (765 M. Cft.) Hence the storage of 21.6 M. Cum. (765 M. Cft.) can be thought of this being the net yields available at the site. The capacity of the reservoir will be 12.3 M. cum. (434 M. Cft) and will have 1-3/4 fillings.

Maximum Flood Discharge :

The maximum flood discharge from the catchment area works out to 1,295 cumecs (45,000 c/s) adopting Ryve's formula with a value of 750 for 'C'. To dispose off the flood, it is proposed to construct Surplus Regulator of Five vents, each 12.2 M x 3.05 M (40' x 10') size. Basin type energy dissipating arrangements have also been provided. The cost of spillway works out to Rs. 67.00 lakhs.

Crop requirements :

The new area proposed for irrigation will have single crop of paddy. The cultivation season is from October to February. The catchment and the ayacut of the Reservoir are influenced by North-east monsoon. The soil throughout the area is clay loam and red earth mixed with clay which is suitable for paddy cultivation. A duty of 7-1/2 acres/ M.Cft. for the new ayacut is adopted.

HEADWORKS

Salient features :

The scheme proposed is to form a Reservoir of about 12.3 M. Cum. (434 M. Cft.) capacity across Kodaganar river in Vedasandur taluk of Madurai Dist. The site is about 10 K.M. (6.3 Miles) north of Vedasandur. A metalled road leads to the site proper. The latitude and longitude of the site are 10' 35'-32" east and 77' 58'-24" North. The nearest Railway station is Dindigul, which is at a distance of 33 K.M. (20 Miles) from the site.

ECONOMICS OF PROJECT

Spillway and Earthdam :

Maximum flood discharge	1,295 cumecs (45,000 cusecs).
Crest level of spillway	192.00 M. (628.86 FI)
Length of Spillway portion	73.15 M. (243 ft.)
Length of Earthdam	2,425.00 M. (7,956 ft.)
Top width	4.7 (M (16 ft.)

Front slope 2:1 and 2-1/2:1 below 6 M from T.B.L.

Rear Slope. 2:1 and 3:1 below 6 M from T. B. L.

Sluice :

	Sill level.	*No. of vents.*	*Discharge.*
Left side Canal.	195.00 (639.80 M. Cft)	One	1.3 cumecs (46.4 cusecs)
Right side Canal.	do	One	4.6 cumecs. (161.5 cusecs.)

Ayacut Proposed :

(Ha./Acres)	*New*	*Gap*	*Stabilisation.*
Right side canal	1,405/3,470	144/356	331/619
Left side canal.	675/1,670	..	..

FOOD PRODUCTION

From the new areas o 224 ha. (5496 acres) at 0.8 tonne/acres. (including gap of 144 ha. (356 acres) ..	4,396.8 *Tonnes.*
From the stabilisation of 331 ha. (819 acres) at 0.5 tonne/ acre. ..	409.5
Deduct for acquisition of land at 0.25 tonne/acre for dry lands and at 0.8 tonne/acre for	
1089.08 62.67/4 0.8 / 4	(—) 322.4
Total net production	4,483.9 or say 4,484

Total cost of the scheme	Rs. 212.00 lakhs.	
Cost of one tonne of food production works out to :	212.00 lakhs/4484	: Rs. 4,728.00
Cost per acre :—		
The cost per hectare	Rs. 212.00/2555	Rs. 9292.00
The cost per acre.	Rs. 212.00/6315	Rs. 3352.00

Land Acquisition :

The total land to be acquired for the scheme is 466 ha. (1151.75 acres) for headworks, the total land acquisition is 303 ha. (760.75 besides 38 tiled houses, 93 huts and 92 wells are also coming under submersion. For canals the land acquisition is about 153 ha. (391 acres) the nature, classification etc. of land, houses etc., required for the scheme are given in a tabular form below :—

Left side canal :

There will be two supply channels taking off at L. S. 880 M (2,886 ft) and 1,425 M. (4,675 ft). from the Reservoir. The left side canal is 9 K. M. (56 Miles) in length. The canal is aligned on contours so as to irrigate lands on one side only since the terrain permits only contour canal. A balanced depth of cutting is adopted. There are nine nos. of sluices in the left side channel to irrigate 675 ha. (1670 acres) of ayacuts. The first reach of the left side canal is from 0 to 5 K.M. and the section is 3.1 x 0.61 M. and the second reach is from 5 K. M. to 9 K. M. and the section is 2.4 x 0. 61 M. The villages benefitted under the canal are (1) Kalvarpatti and (2) Periamanjuvali.

Right side canal :

The right side canal is aligned as contour canal and it takes off at L.S. 1425 M (4675 ft.) The total length of the canal is 48 K.M. (30 Miles). There are 22 nos. of sluices in the right canal. The total ayacut proposed under this canal is 1830 ha. (4045 acres) which includes a new ayacut of 1405 ha. (3470acres) and gap of 144 ha (356 acres) besides stabilisation of the existing ayacut of 332 ha. (819 acres) under four tanks. The villages benefitted are (1) Pallappati and (2) Koombur.

The first reach of canal is from O to 12 K. M. and the section is 2.7 M x 1 M and the second reach is from 12 K. M. to 43 K.M. the Canal section is 1.9 M. x1 M. The third reach of the canal is from 43 K.M. to 48 K.M. and the section of canal is 1.6 M x 0.8 K.M. There are three nos of drops at L.S. 47.2 K.M. 47.4 K.M. and 47.65 K.M.

The right side canal is proposed to be lined with cement concrete 1 : 4 : 8 as the soil is very porous and the length of the canal is as long as 48 K.M. The side and the base are provided with cement concrete libs of 7.5 cm. X 7.5. cm. at 2 M. intervals. The loss in transmission in the right side canal will be utilised for bringing under cultivation a new ayacut of 920 acres.

Estimate and Programme of execution :—

The scheme was sanctioned Govt. on G.O. Ms. No. 1296, P.W.D. dt. 23-8-1973 for Rs. 212.00 lakhs. The scheme estimate is technically sanctioned for Rs. 233.2 lakhs. in Chief Engineer's (Irrigation) Madras No. 7F/1973-74 it is programmed to complete the Head works in 640 days commencing from 1.4.1974 to 31-12-1975. Foundation stone was laid by the Honourable Chief Minister of Tamil Nadu on 25-8-1973 at Uppida Mangalam. The Secretary, PWD, inspected the works on 1-8-1974. The Honourable Minister for works also inspected the works on 2-3-1975. For execution of this scheme a special Division with three sub-divisions with Head Quarters at Dindigul was formed on 19-12-1973 on completion of the office Building at Vedasandur Camp, the Office was shifted on 16-9-1974 to Vedasandur.

Present stage of the Scheme :

All quarters are completed and occupied. Earthdam left and right Regulator are nearing completion. Necessary urgent action are being taken to celebrate the inauguration function of the scheme and to commission the dam shortly. In addition of Special Division for Canals with three sub-divisions with Karur as head quarters was formed on 21-10-1974.

RETURN ON THE PROEJCTS

The total extent of the ayacut benefitted is 2,080 ha. (5140 acres) of new ayacut, 144 ha. (356 acres) of gap and 331 ha. (819 acres) of existing ayacut.

The presentage of return on direct charges without and with betterment levy works out to 0.554 and 0.810 respectively. The return on the Project is, however, only 0.324% at the tenth year of completion of the Project if arrears of interest is also taken into account.

Reservoir.		*MRS Units*	*FPS Units.*
Catchment area	..	1,670 Sq. K.M.	645 Sq. Miles.
M.W.L. and F.R.L.	..	200.25 M.	657.00 ft.
T.B.L.	..	202.75 M.	665.00 ft.
Capacity at F.R.L.	..	12.3 M3.	434.00 M. Cft.
Water spread area	..	492. H.a.	1,216 acres.
Spillway :			
No. of vents and size. 5 Nos.	..	12.2 x 3.05 M/40' x 10'	
Crest Spillway	..	192.00	628.86
Maximum flood discharge	..	1,295 cumecs.	45,000 C/s
General :			
Total ayacut benefitted :			
New	..	2,080 hafi	5,140 ac.
Gap	..	144 ha.	356 ac.
Stabilisation	..	231 ha.	819 ac.

Details.	*Patta*		*Garden Acts.*	*Porom-boke Acs*	*Tiled Houes.*	*Huts*	*Wells*
	Dry acs.	*Wet acs.*					
1. Head works	634.45	62.67	63.63	558.15	38	93	92
2. Left Canal.	49.00	..	..	..	..	..	..
3. Right Canal.	342.00	..	..	..	..	..	..
4. Total.	1025.45	62.67	63.63	558.15	38	93	92

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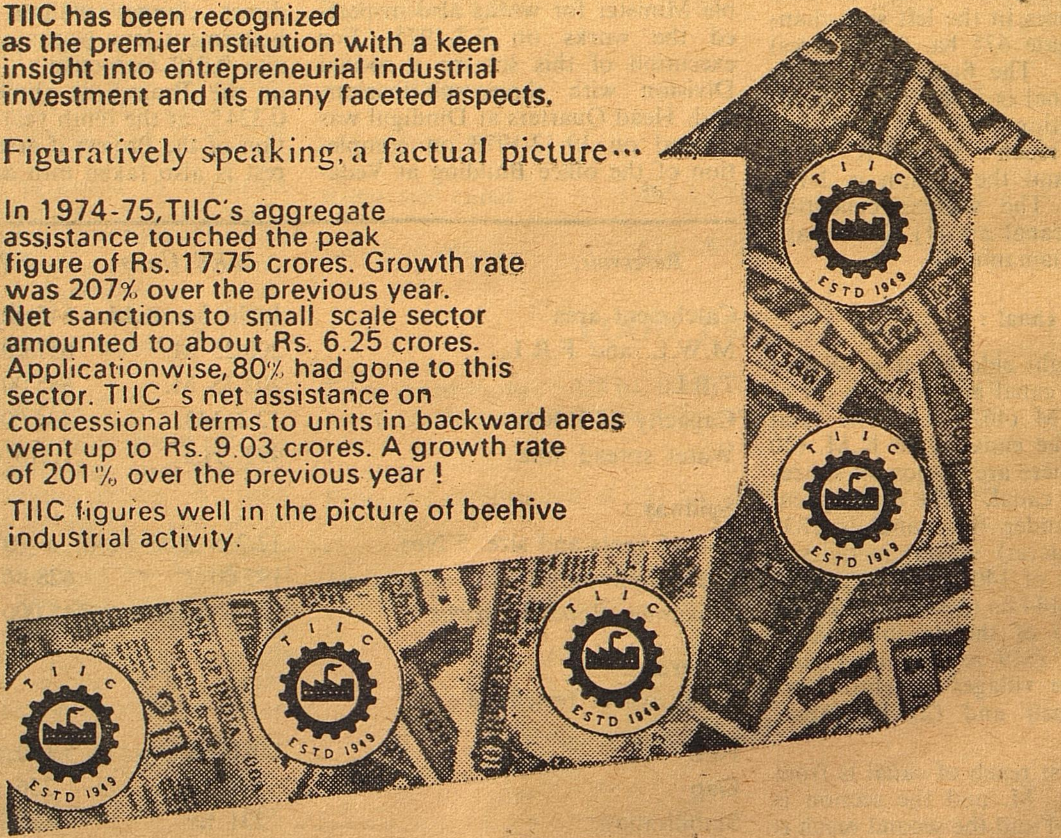

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DIETING WITHOUT TEARS FOR DIABETICS

Madras Doctors Prove Rice is no "enemy" of diabetes

It is still widely believed that rice should be totally avoided by a diabetic and instead, he should eat wheat or ragi. While it is difficult to explain the origin of such a belief, it probably goes back to the pre-insulin era, that is, the Naunyn period, when treatment of diabetes consisted of severe carbohydrate restriction and intermittent fasting. **However, with our present understanding of diabetes and in the light of experience with rice diets at the Diabetes Research Centre, Madras, we feel that the avoidance of rice is hardly justified. In fact by prescribing a carefully worked out rice-diet to a rice-addicted diabetic, the disease is brought under control quicker.**

The fallacy of a diabetic changing over to a wheat or a ragi diet as part of the treatment of diabetes mellitus becomes obvious as we take a look at the food values of major cereals.

Table 1, shows very little difference between the various cereals in their carbohydrate content. The diabetic who changes over to a wheat or a ragi diet and then consumes twice his normal amount of food under the firm belief that he is undergoing 'treatment' for diabetes is only deceiving himself. The first step in the treatment of diabetes by diet control is reduction in the total calories of food. It is quite immaterial whether one takes rice, wheat or ragi.

It might be thought by some that wheat contains more protein than rice (11.8 gm per cent in wheat compared to 8.5 gm per cent in rice). While this difference itself is not appreciable, Gopalan and his colleagues at the National Institute of Nutrition, Hyderabad, have shown that the protein of rice is superior to that of wheat. **Experience with rice diets over a period of 15 years has convinced that if the total calories are restricted, a rice diet can be used for a diabetic to achieve easier, quicker and better control of diabetes.**

In India, in the majority of the population, cereals form bulk of the diet and constitute the major source, if not the only source, of nutrients. In South India, people are accustomed to a relatively higher carbohydrate content in the food at the expense of proteins. A typical South Indian meal of the middle income group is of about 3,000 calories, which consists of a morning tiffin of iddlies or dosas, rice meal in the noon and night and coffee

By

A. RAMACHANDRAN,

M. VISHWANATHAN,

Diabetic Research Centre,

Madras.

in between consisting of the composition as shown in Tables 1 and 2. The respective percentage of carbohydrate, proteins and fat is shown in Table 3.

The food of an average Indian is quite rich in carbohydrate in the form of rice and wheat and severe restrictions in their diet pattern, is unlikely to be adhered to over a long period of time. In view of of the pattern of food in our country, many workers felt that a higher carbohydrate content in the diet of the diabetics was necessary. Patel of K.E.M. Hospital, Bombay and Vaishnava of the Maulana Azad Medical College, New Delhi noted the usefulness of diets with a higher content of carbohydrate.

In 1968, Viswanathan of Madras reported his results with the high carbohydrate diet that he formulated for diabetics, with carbohydrates constituting about 60% of the diet. The carbohydrate given was usually rice. The total calories was calculated at 25—30 calories per kg. of ideal body weight. It was found, however, that many patients did not have sufficient protein in their diet. The protein content of the diet was then raised, which resulted in a further reduction in the fat content of the diet. While selecting the fat, steps were taken to see that a good percentage was of the polyunsaturated variety.

The protein added was in the form of pulses like bengal gram, green gram and black gram. This helped not only to provide a greater variety of palatable food, but also to achieve easier and better control of diabetes. There was yet another important reason for addition of these pulses. Cochrane and his colleagues in 1956, and Mathur in 1969 from Agra, have shown that bengal gram helps in the prevention of arterosclerosis by reducing serum cholesterol and triglyceride and possibly through some other mechanisms. As is well-known in the diabetic, the arterosclerotic process is accelerated. Hence, in the diet described above, it is felt that addition of bengal gram might help in delaying arterosclerosis and prevent its crippling vascular complications. Gopalan has also stated that the proteins of cereals and pulses have a mutual supplementary effect and the deficiency of one amino acid in one food stuff can be made good by its excess in the other, if both

are consumed at the same time. This makes this diet a well balanced diet for diabetics. It may be called a restricted calorie, high carbohydrate high protein, low fat diet.

A break-up of the high carbohydrate-high protein diet is given in Tables 4 and 5.

When patients were put on this diet the fasting blood sugar was reduced and the glucose tolerance test showed improvement. The following observations have been noted during use of this diet over a long number of years.

1. The patients co-operation was more readily obtained, because the pattern of the diet was not changed.
2. The incidence of ketosis (diabetic coma) was found to be low.
3. The control of diabetes was easier and quicker.
4. The dose of drugs used was very low.
5. The serum levels of cholesterol and triglyceride showed a tendency to fall contrary to current belief.
6. The incidence of vascular complications was found to be low on follow up of patients on this diet.

Conclusion :

There is no such thing as an ' ideal ' diabetic diet. Any diet that is restricted in the total number of calories, and which is likely to be adhered to by the diabetic throughout his life, and which will not lead to any deleterious effects by increased levels of lipids, which are important risk factors in arterosclerosis, may be considered a satisfactory diet. For the average diabetic in India, who is used to a diet richer in carbohydrate, a diet that is restricted in calories and in its fat content, and is rich in carbohydrate and protein seems to be the best diet. The protein is taken preferably in the form of pulses like bengal gram or green gram. Regarding the carbohydrate content, there is no difference between rice, wheat or ragi. Hence, there is no need to change from a rice diet, which is the usual diet in our country, to a wheat or a ragi diet.

TABLE 1

FOOD VALUES OF CEREALS

Cereal	*In gm. per 100 gm.*		
	Carbohydrate	*Protein*	*Fat*
Rice	78.2	8.5	0.5
Wheat	71.2	11.8	1.5
Ragi	72.0	7.3	1.3

TABLE 2

TYPICAL SOUTH INDIAN DIET—COMPOSITION

	Gm	*Carbo-hydrate*	*Protein*	*Fat*	*Calories*
Cereals	550	440	33	2	1,910
Pulses	30	18	6	..	96
Oils and fats	40	..	..	40	360
Root vegetables ..	50	12	1	..	52
Leafy vegetables ..	50	3	1	..	16
Milk	300	14	10	11	195
Meat, fish and egg ..	40	..	7	5	73
Sugar and jaggery ..	60	60	..	..	240
Fruits	50	15	..	..	60

TABLE 3

TYPICAL SOUTH INDIAN DIET — BREAK-UP OF PROXIMATE PRINCIPLES

	Gm.	*Calories*	*Percentage*
Carbohydrate	562	2,248	75
Protein	58	232	8
Fat	58	522	17

TABLE 4 — HIGH CARBOHYDRATE—HIGH PROTEIN — LOW FAT DIET — COMPOSITION

	Gm.	*Carbohydrate*	*Protein*	*Fat*	*Calories*
Cereals ..	.. 175	140	11	1	613
Pulses ..	.. 150	90	36	4	540
Oils and fats	.. 30	..	..	30	270
Leafy vegetables	.. 150	8	3	..	44
Milk (skimmed)	.. 600	27	15	..	168
Meat and fish	.. 60	..	12	10	138
Egg white	..2 Nos.	..	26	..	104
Total ..	..	265	103	45	1,877

TABLE 5 — HIGH CARBOHYDRATE—HIGH PROTEIN — LOW FAT DIET BREAK-UP OF PROXIMATE PRINCIPLES

	Gm.	*Calories*	*Percentage*
Carbohydrate	265	1,060	56.4
Protein	103	412	22
Fat	45	405	21.6
Total Calories		1,877	

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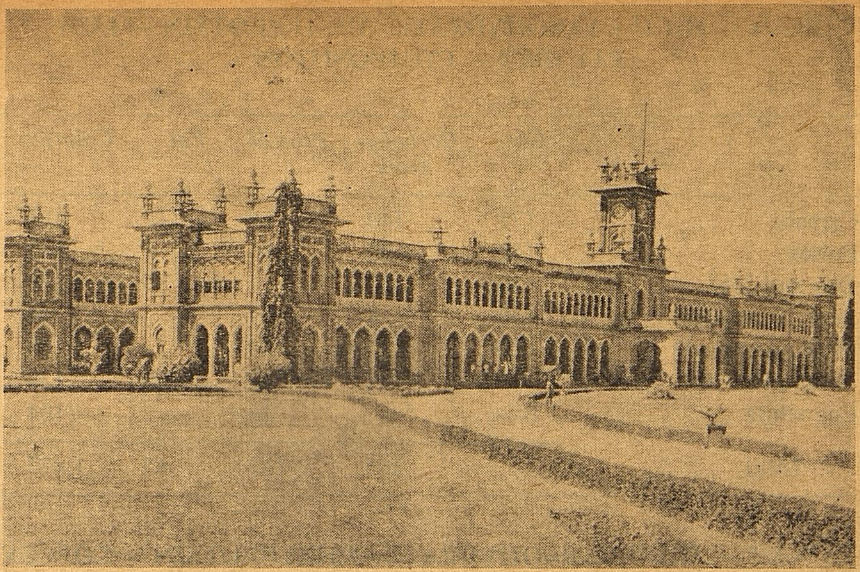
All About Tamil Nadu Agricultural University



The Agricultural College and Research Institute, Coimbatore started in 1907, and one of the oldest Agricultural Colleges in India, became the nucleus of the University when it started functioning on June 1, 1971. The College has to its credit to have been the second post-graduate institution in agriculture since 1958, the first one being the Indian Agricultural Research Institute, New Delhi. The Research Institute at Coimbatore has a reputation for its work on Plant Breeding and Genetics, Soil Science, Agronomy, Plant Pathology, Agricultural Entomology, Horticulture, Agricultural Engineering and a few other related areas. Ideally located in our agriculturally rich area, with typical red, black and alluvial soil types and dry-land, garden-land and wet-land farming systems spread over an area of about 720 acres, the campus is one of the most attractive spots in the State of Tamil Nadu. The research findings of the centre have benefited the farmers of the State to a remarkable extent that every year thousands of farmers from many corners visit the Research Institute. Together with the second Agricultural College at Madurai, started in 1965 the College has trained so far over 5,000 Agricultural Graduates and about 1,000 post-graduates from many southern States, and some of them are to-day's leaders in the fields of Agricultural Education, Research and Extension in several State and in All India institutions. The newer Agricultural Colleges in the States of Kerala, Andhra Pradesh and Karnataka have adopted several of the academic and administrative features of the Coimbatore College and Research Institute. Having played such a prominent role for over half a century, the College got its due recognition from the Joint Indo-American Team appointed by the Government of India, leading to an offer in 1958 from the Government of India for the establishment of the first Agricultural University in India at Coimbatore. Unfortunately this offer was not availed of at that time and the State waited for 13 long years by which time 14 other Agricultural Universities had been established. Today we have 22 Agricultural Universities in India, one in each State, excepting four in Maharashtra, three in Uttar Pradesh and one in Assam serving the needs of the hill States of Assam, Meghalaya, Manipur, Arunachal and Mizoram. The Tamil Nadu Agricultural University is now trying hard to re-establish its leading position as an academic and research institution.

During the first two years of of its existence the University organised its administrative, academic, research and extension education set up, gaining from the rich experience of other Agricultural Universities in the country. The University Statutes, Regulations, Rules and Guidelines were framed and finalised. The services of the employees of all categories who were transferred from the State Government and of those newly recruited by the University were regularised with effect from October, 1974. Of the seven Faculties provided for in the University Act four have already been established and they are : (*i*) Agriculture, (*ii*) Agricultural Engineering, (*iii*) Veterinary and Animal Sciences and (*iv*) Basic Sciences and Humanities. Under each of the Faculties several University Departments have been organised. The Agricultural College at Madurai was also reorganised to fall in line with the set up at Coimbatore. Barring the Madras Veterinary College, there are 22 Departments, which include Fisheries, Forestry and Food Technology. These latter three Departments would form the nucleus for the Faculties of Fisheries Science, Forestry and Home Economics, provided for in the University Act. Thus, the infra-structure for the integrated, multi-disciplinary activities to cover all branches of Agricultural Science in its broad definition has been provided. Each of the University Departments has been given the responsibility of teaching, research and extension education in an integrated manner and adequate administrative and financial authorities have also been given for the Departments to effectively carry out the functions entrusted to them.

By

Dr. G. RANGASWAMI

Vice-Chancellar

Tamil Nadu Agricultural University.

Teaching :

On the academic side, the teaching programme was thoroughly reorganised with a modern outlook and flexible curricula in the undergraduate and post-graduate programmes. The Trimester system of education, with cent per cent internal assessment and continuous evaluation of students learning capacity in the class room and outside was introduced in 1972 and has been working most satisfactorily both in the main campus in Coimbatore and in the second campus in Madurai. New degree programmes leading to four year professional B.Sc. (Hort.) and five year professional B.E. (Agri.) were introduced in 1972. The new Department of Seed Technology established in 1973, offers a two year M.Sc. Ag. degree in Seed Technology, the first of its kind in India. The Department of Biology of the Faculty of Basic Sciences and Humanities offers a two year M.Sc. programme in Environmental Biology, again the first of its kind in India. The rush for admission to the under-graduate classes have been rapidly increasing ever since the University came into existence. As against about 7 or 8 applications for every seat prior to 1971, to-day we are receiving 10 to 15 applications for each seat, and this is inspite of the fact that the minimum requirements for filing applications have been substantially increased. Thus we have been able to select and admit candidates of high calibre and considering that to-day's students are to-morrow's staff, we are assured of continued improvement in the quality of work in our future teaching, research and extension education programmes of the University and in the State.

Research :

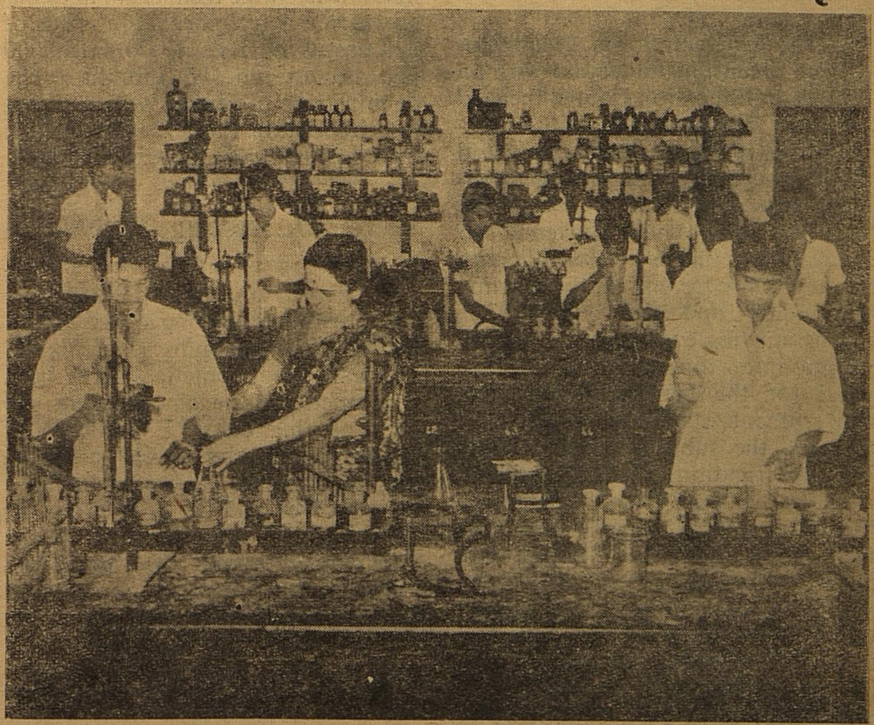
Research in the University has been reorganised to cover not only the new branches of Agricultural Science but also to make it field-oriented, project-based and time-bound. The research activities in the University are formulated under the guidance of a Research Council headed by the Vice-Chancellor, with Deans, Directors, five nominated Heads of Departments and five leading scientists from outside the University, as Members. In order to identify the field problems of regional importance and to review the research results, annual meetings with the senior officials of the State Development Departments are held, when the research findings useful for extension programmes, new problems needing attention and reorientation of the existing programmes to suit the changing needs of the extension agencies and the farming community of the State, are discussed and decided. To-day we have on hand over 900 research projects being carried out at 18 centres spread all over the State in which over 700 scientists and 500 technical and supporting personnel are engaged. About one third of the funds for the University's research activity is received as grant from the ICAR and the rest from the State Government and from the University's revenue. The University has developed a Master Plan for expanding its research activity to cover several branches of agricultural sciences and to strengthen Regional Research Stations so as to serve all the agro-climatic and hill regions of the State. The Plan covers both long and short range programmes and links up with the State Plan requirements in respect of technical man power for teaching, research and extension education in crop production, horticulture, animal production, agricultural engineering, home economics and rural development, fisheries, forestry, etc. Presently, the Plan is being implemented in a rather slow pace due to limited financial resources made available by the State and Central Governments.

"Firsts" to its credit

M.Sc., Ag. Seed Technology

M.Sc., Environmental Biology

The concerted efforts of our scientists during the past four years have yielded rich results and the chief among them are the release of five high yielding varieties of rice, two each of sorghum and ragi, one each of blackgram, greengram and redgram, five new varieties of vegetables, two of fruits, one of groundnut and two of cotton. The extra benefit on account of this to the State in terms of additional income to the farmers is estimated at about Rs. 20 crores per year. There are several innovations such as jasmine oil extraction plant, cultivation of nitrogen-fixing protein-



Tests being carried out in the Chemistry Laboratory

Research to suit all agro climates Planned

rich **Pleurotus** mushroom, use of **Rhizobium** and **Azotobacter** for increasing crop yields and packages of practices for cropping systems for different agronomic regions of the State have been made. Several newer research items such as improvements in seed production technology, design and development of new machines for farm produce processing and storage, formulation of new recipes from minor millets and of beverages from fruits, composite fish culture in inland waters and farm ponds, economic farm forestry practices, reducing the cost of feed for poultry and cattle are being actively pursued.

Extension Education :

The University has a Directorate of Extension Education with an Extension Education Council, headed by the Vice-Chancellor, with representatives of progressive farmers and of the University and State Government representatives as members. This body advises the University on the ways and means of disseminating newer knowledge among the farming community and the public. The extension wing organised 28 training programmes during the past four years for the benefit of the State Government staff and progressive farmers, the subjects covered being Minor Irrigation, General Agriculture, Farm Management, Extension Techniques, Hydrology and Sedimentation, Agricultural Economics, Seed Technology, Floriculture etc. About 500 persons have been trained under these programmes. Adaptive trials for assessing the performance of pre-release varieties of cereals and pulses have been conducted in different parts of the State. In all 74 such trials have been conducted during the past three years. This helps the extension staff to gain first hand knowledge on the newer strains and the research staff to learn about the strong and weak points of their research findings.

The National Demonstration programme had three centres under the University in the districts of South Arcot, Tiruchirapalli and Madurai during 1972—74. Presently, there is only one centre functioning in Madurai district. Under these programmes 151 demonstrations have so far been conducted in farmers' fields. The benefits to the farmers through adoption of modern scientific techniques in intensive farming are reflected in terms of net profits of Rs. 18,000 to 50,000 per hectare in 12 months. The demonstration farms were utilised for conducting Field Days in which over 6,000 farmers have participated.

Water Harvesting Techniques

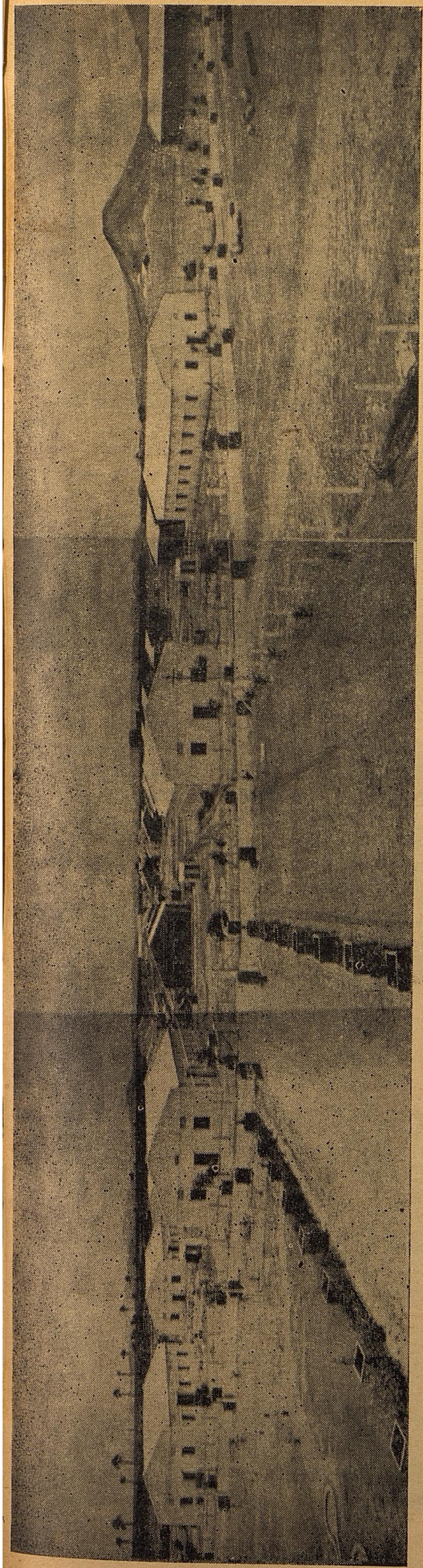
There is one pilot project associated with dry farming at Kovilpatti. Several new cropping programmes and cultivation practices have been developed for the black cotton soil area of this district. Methods of intercropping and mixed cropping and to conserve soil moisture have been evolved and the same are being demonstrated in the farmers' fields. Techniques for water harvesting and its utilisation in an economic way, have been evolved and are being demonstrated in the pilot project area.

The Communication Centre has been active in publishing literature in English and Tamil covering many subjects pertaining to agriculture. The University Press, under the Communication Centre has already published about one hundred booklets and leaflets and a few books. A quarterly journal in Tamil " Valarum Velaanmai " is published for the use of the public. This journal is meant for popularising scientific knowledge on selected branches of agriculture among not only the farming community, but also the general public.

The University has started ' Correspondence Course ' for the benefit of farming community and so far 18 batches have been trained bringing benefit to about 300 farmers in different fields such as Intensive Rice Cultivation, Poultry Husbandry, Vegetable Cultivation, Cotton Cultivation etc. Lessons on scientific farming are being broadcast through the All India Radio at regular intervals. Thousands of querries from the farmers have been answered so far. The **Farm Advisory Council** consisting of Heads of Departments of the University has been solving some of the most difficult field problems of the farmers. The problems of the farmers are referred to the Farm Advisory Councils through the State Government Extension Departments and through the Farmers Training Centres, two of which are located in the University, one at Coimbatore and another at Madurai. The Specialists of the University attend to these problems and find solutions which are transmitted to the farmers and where necessary, demonstrations are conducted in the farmers' fields.

In conclusion it may be stated that during the first four years of its existence, the University has organised and stabilised itself both administratively and academically, as an institution of comparable high standards. It has geared itself to meet with the challenging needs of the farmers of the State. Several newer departments have been started and through an integrated and interdisciplinary approach scientific data on economic and efficient utilisation of soil, water and other natural resources are being obtained for transmission to the farmers through the various extension agencies in the State. Given increasing support from the State and Central Governments it is poised for more rapid progress in the coming years. **

SIPCOT BREAKS NEW GROUND—A CATALYST OF PROGRESS

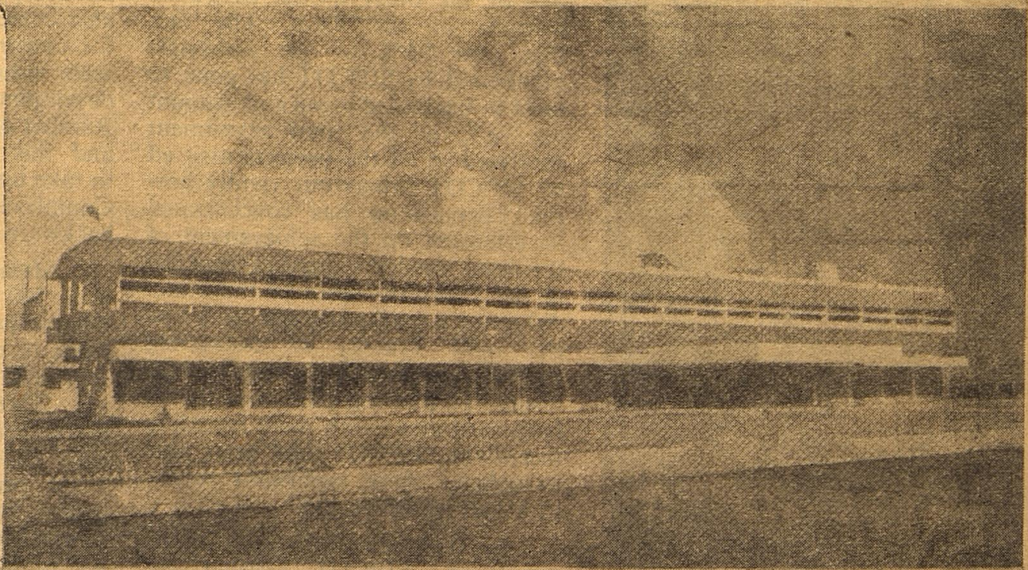


State Industries Promotion Corporation of Tamil Nadu Limited (SIPCOT) during the brief span of three years of its working has cut new ground in the sphere of industrial dispersal in backward areas of Tamil Nadu. In just over three years, SIPCOT has sanctioned assistance for 192 industrial units catalysing a total investment of over Rs. 82 crores with an employment potential for over 13,200 persons. The total assistance sanctioned under the various schemes is over Rs. 11 crores excluding the direct investment of Rs. 1 crore by SIPCOT in the development of Industrial Complexes in backward areas. Except for five projects with a total assistance of Rs. 47 lakhs involving a total investment of less than Rs. 3 crores all the other projects are coming up in one or the other of the backward districts of the State. The fact that over 96% of the assistance sanctioned by SIPCOT has gone to units in backward areas and account for 96% of the total investment catalysed in all the projects assisted by SIPCOT brings out vividly how the Corporation has concentrated its attention on the achievement of the much needed industrial dispersal in the backward areas of the State. Adopting a marketing approach and the right strategy of converting backward areas into developing ones instead of pushing industries to the backward areas with mere financing incentives, SIPCOT has been able to achieve these significant results in a very short period.

In the very first year of its operations, SIPCOT assisted the development of a mini Industrial Complex at Anakaraipatti in Ramanathapuram District where one major engineering unit, two medium scale units and eleven small scale industrial units are already in production with a total investment of over Rs. 3 crores and offering employment opportunities to over 1,000 persons. In the last two years the Corporation has concentrated its attention on the development of a major Industrial Complex at Karunanidhinagar, Ranipet. All the items of work connected with the development of infrastructural facilities in Ranipet have been completed and already 31 projects involving a total investment of over Rs. 27 crores with direct employment potential for over 3,800 persons have been allotted developed plots extending over an area of 268 acres. It is significant to note that as many as eight projects have already gone into production at Ranipet and nine more are under various stages of construction and are expected to go into production shortly. The other 14 projects are under the various stages of formulations like arrangement of finance, procurement of machinery, etc. Viewed against the tight money conditions, sluggishness in the capital market and shortages of critical materials the progresss of implementation of the projects in the Complex is very encouraging. SIPCOT is confident that within the next two years the entire Complex would be fully occupied when the total investment catalysed in the Complex is expected to exceed Rs. 60 crores providing employment opportunities for over 8,000 persons. In addition to this, about 100 small scale industries will also come up in the area set apart for construction of sheds for small scale industries by SIDCO. In the development of backward areas the Ranipet experience has been unique and this has encouraged SIPCOT to take up development of Industrial Complexes one by one in all the backward districts of the State.

Already SIPCOT has acquired over 500 acres of land at Hosur, Dharmapuri District and preliminary work in connection with the infrastructural facilities have been taken up. Three projects involving a total investment of over Rs. 14 crores with an employment potential for 2,500 persons have been allotted land in the Complex. The construction of these projects is being taken up simultaneously with the work connected with the development of Industrial Complex. 32 applications for allotment of land in the Complex are under consideration by SIPCOT besides 15 small scale industrial units who have applied to SIDCO for allotment of developed plots and sheds. Despite the financial constraints SIPCOT has programmed to complete the development work in this Complex in the course of next two years and by that time the Industrial Complex will be humming with activity with about 10 industrial units in production and a few more under construction. SIPCOT has also planned to take up the development of a third Industrial Complex near Manamadurai where preliminary investigations for tapping the required water and survey of area has already been undertaken. It is SIPCOT's plan to develop Industrial Complexes

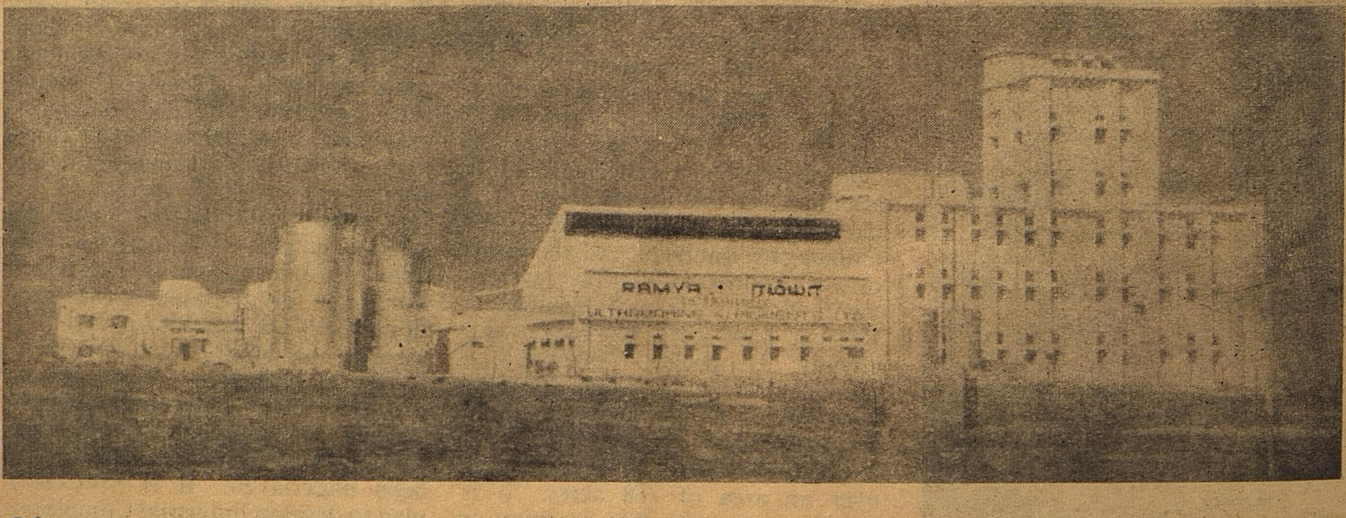
SOME FACTORIES IN SIPCOT.
RANIPET



Above : **SECALS LTD.** They make precision tools with American collaboration.

Right : **S R P TOOLS** They make gear shaping tools which compete in world market.

Below : **ULTRAMARINE & PIGMENTS** They manufacture "**RAMYA**" brand detergent soaps etc.



in the other backward districts one by one during the course of the next five years.

In the sphere of financial assistance, SIPCOT has provided the needed supplemental assistance for 47 projects with total term loans of Rs. 4.77 crores and underwriting assistance for Rs. 52.5 lakhs. Already 13 of these projects are in production. While lack of finance has forced us to deliberately restrict our further assistance to the minimum required, SIPCOT will be able to ensure that no worthwhile project is allowed to languish for want of finance as it has developed close liaison with the State Financial Corporation (TIIC), Commercial Banks and other All India Financial Institutions. In respect of projects costing less than Rs. 1 crore it will be possible to ensure that in collaboration with TIIC, and Commercial Banks all the required finance is found from institutions within the State. As regards bigger projects, we will be able to ensure the necessary assistance from the All India Financial Institutions and consider extending underwriting support upto a maximum of 10% of the capital issues subject to a ceiling of Rs. 10 lakhs. Therefore, lack of finance will not stand in the way of new projects coming up in Tamil Nadu especially in backward areas.

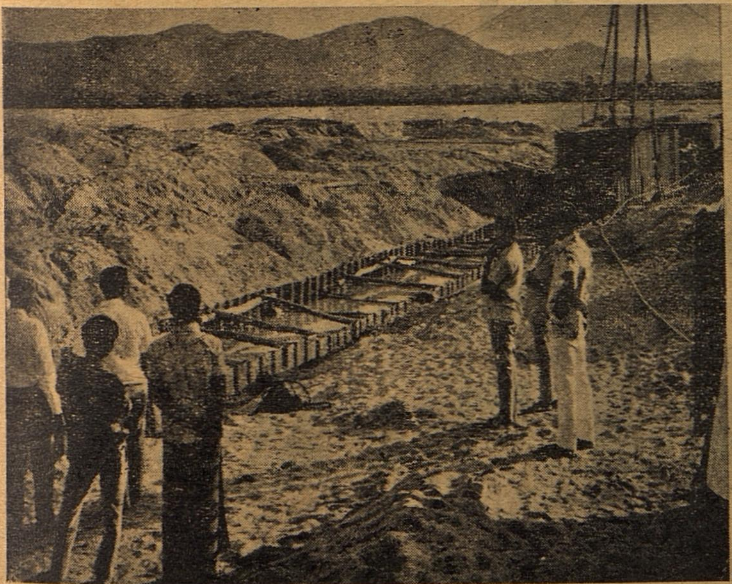
The important incentive provided by the State Government through SIPCOT is the Interest Free Sales Tax Loans. Under the Scheme SIPCOT has assisted 15 projects with over Rs. 2.11 crores as Sales Tax Loan. Of the 15 projects sanctioned assistance under this Scheme 13 have already gone into production. It has been decided at the instance of State Government to provide for a ceiling of Rs. 15 lakhs under Part I of the Scheme in respect of expansion and Rs. 25 lakhs in respect of new units with a view to make the incentive available to as large a number of units as possible without increasing the overall commitment of the State Government. Already over 30units have applied for assistance under this Scheme.

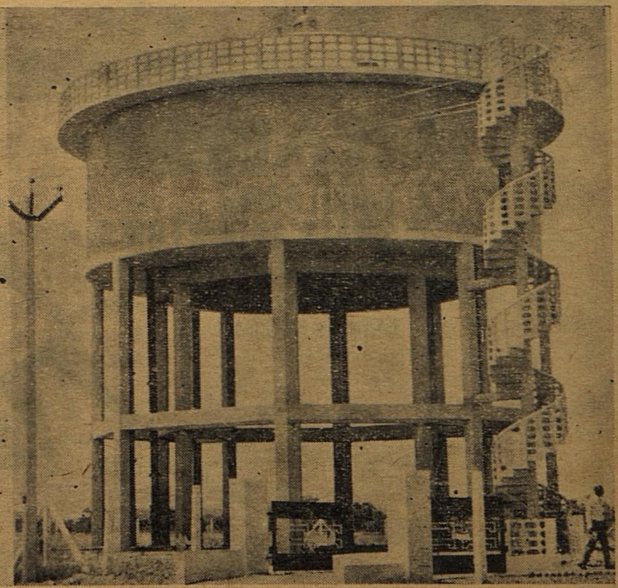
Under the Central ubsidy Scheme SIPCOT has sanctioned over Rs. 379 lakhs of subsidy to 58 medium and major units and 112 small scale units. Together with Rs. 28 lakhs of subsidy sanctioned through SIDCO to 173 small scale industrial units, the total sanction of subsidy is over Rs. 407 lakhs. Over 105 small scale units and 38 medium and major units which have been sanctioned subsidy by SIPCOT have already gone into production. Because of the delay involved in the reimbursement of the subsidy from the Central Government nearly a crore of rupees of SIPCOT's funds including about Rs. 45 lakhs of the State Government's funds with SIP COT have been utilised for the disbursement of subsidy pending reimbursement by the Central Government. Efforts are being made to evolve a suitable procedure for quicker reimbursement of subsidy by the Central Government and in the meanwhile SIPCOT has been able to meet all the eligible claims to the extent its limited resource can permit. In fact SIPCOT has so far disbursed over Rs. 37 lakhs as bridge loan with a view to see that the assisted projects are implemented without any avoidable delay.

10 projects based on the feasibilty studies commissioned by SIPCOT are under the various stages of formulation and implementation. One project for the manufacture of Phyto Chemicals is likely to go into production before the end of this year.

SIPCOT has set up a Consultancy Division (SMACS) to provide technical and management consultancy services to entrepreneurs. Some of the studies which have been completed by this Division include a Survey of Chemical Industries for the Industries Department of the Government of Tamil Nadu, a Techno-Economic Feasibility Sutdy on Cashew based industries around Jayamkondan, Trichy District for the Collector of Trichy and a preliminary report on ancillary industries around Neyveli for the Industries Department. The Division is also making a preliminary study on small news print plants. In due course it is our aim to make this Division as a focal point for all consultancy services for State Government agencies as also private entrepreneurs.

Since its inception SIPCOT has been rendering a number of ancillary services covering the entire spectrum of entrepreneurs' needs in the conception, implementation and management of projects. Besides recommending the applications for Letters of Intent and Licences, SIPCOT has been closely following the implementation of the licensed projects and such project implementation services have been given to over 50 projects. Entrepreneurs have always been appreciative of all non-financial services rendered by SIPCOT.





Water being an essential infrastructure for promotion of industries, **SIPCOT** Complexes have water aplenty. Picture above shows the water-treatment plant and overhead tank at Ranipet Complex.

TANSI at TEN–
no TENder-feet, but TENder-hearted!

In just a decade, we've come to be known for our service to the consumers. In new product development, in sales of industrial and consumer goods, in diversification and in consumer oriented down-to-earth approach, we have become a force to reckon with.

Even when it is tough going, we don't suffer from tender-feet. We are renowned for that 'full of feeling' feeling for our consumers.

Our product range— Steel and wooden furniture, Agricultural implements, Hospital equipment, Scientific glassware, Locks, Structurals, Enamelled wires, Forged and Die Cast components, Leather goods.

GOLDTEN YEARS OF TANSI

10

TANSI

TAMILNADU SMALL INDUSTRIES CORPORATION LTD.,
26, Whites Road,
Madras 600 014.

TANSI Towers Receive Space Signal from "Aryabhatta" Australia Buys Tansi Wool

TANSI WILL PRODUCE MACHINE-TOOLS WITH HMT COLLABORATION

SIGNIFICANT GROWTH IN TEN YEARS

Tamil Nadu Small Industries Corporation, popularly known as TANSI is entering its 11th year of existence today. It was exactly 10 years ago that this organisation was brought into being as a result of a decision of the Government to convert into Production Units such of those Units which were started by the Directorate of Industries and Commerce. Government of Tamil Nadu as Service Units, to enable entrepreneurs to start industries in Industrial Estates. The transformation of service-oriented industrial units into the production—oriented industrial units is beset with difficulties and challenge which are not easy to overcome. However, TANSI has greatly fulfilled the faith with which it was formed and to-day from a mere Rs. 300 lakhs of production in the year of its inception, TANSI has reached a production level of over Rs. 10 crores.

There are 56 production units and five sales units under TANSI which are scattered all over the State. The products manufactured and sold by TANSI are so many that it varies from cycles for school boys, fashionable leather goods, scientific glasswares for schools and colleges, cast iron specials for the pipe lines, tractor-drawn trailers and other implements for the Agriculturists, durable door locks for ensuring safety to buildings, copper winding wires for the industry, tanned and finished leather sides for the leather goods industry, processed goat hair for woollen carpets, steel and wooden furniture for the home, office and industry to the steel fabricated heavy structures for the factories and Railways.

In the field of heavy structural fabrications, TANSI's contribution to the various nation-building activities has really been significant. Challenging structural fabrication orders were executed by TANSI for the Bharat Heavy Electricals Tiruchirapalli, Hindustan Shipyard, Visagapattinam, Arkonam Steels, Mysore Iron and Steel Ltd., Bhadravathi, Hindustan Machine Tools, Hyderabad and Southern Petro-Chemical Industries Corporation, Tuticorin. Besides, TANSI has fabricated and supplied transmission towers to the various Electricity Boards in the country and the Middle East. The multitude of Micro-wave towers installed by the Central and South Central Railways and the Post and Telegraphs Department are manifestations of the memorable jobs executed by TANSI. It is a matter of pride for TANSI that one of the Micro-Wave Towers opposite the Madras Harbour has been utilised to receive the signals from the Indian Satellite 'Aryabatta.' TANSI is engaged by the Sugar Corporation of Tamil Nadu for fabrication and erection of some of the Sugar Factories in Tamil Nadu.

The pressure die casting unit of TANSI situated at Guindy makes die casts of non-ferrous alloys like zinc, aluminium etc. The Unit has been supplying die-cast components to many of the automobile manufacturers in the country. The Scooters India Ltd., Lucknow are also buying some of their die-cast components from this unit. The Tool Rooms of TANSI make sophisticated precision tools for various industries not only in Tamil Nadu but also in the whole country. The customers in this line include Bharat Heavy Electricals Ltd., Bharat Electronics, Scooters India Ltd., Hindustan Aeronautics, India Pistons, Chitaranjan Loco Works, etc.

The Machine Shops of TANSI have been supplying machined components for various defence units. The TANSI Forge Shop supplies forged components of high precision to industries like the Scooters India Ltd., Lucknow, the Neyveli Lignite Corporation, The Bharat Heavy Electricals etc. Leather division consists of 5 units of which the Tannery situated at Vinnamangalam, North Arcot District, manufactures finished leather of different kinds of a very high quality. This Tannery has produced a particular type of leather which is known as Vinnamangalam Leather in the whole country. The finished leather is largely exported to European countries earning valuable foreign exchange to the country. It is a matter of pride for us that this Unit has so far exported finished leather and semi-tanned hides to the value of Rs. 116.61 lakhs. TANSI Wool Processing Centre, Vinnamangalam, is completely an export oriented industry. This unit washes and dyes the goat hair and exports the entire quantity to Australia amounting to Rs. 15 lakhs annually. The other three leather Units under the Corporation specialise in the production of footwear and other leather goods, industrial gloves etc.

The wide range of agricultural implements produced by TANSI which include tractor-drawn trailers, cage wheels etc., are in great demand with the agriculturists. To meet the demands of the agriculturists, who are availing the loan under the World Bank Scheme of purchase of Tractors, TANSI has developed a heavy duty Trailer which can haul upto 10 tonnes of load.

The wooden furniture of TANSI very well known both in our own State and in the neighbouring States, are made out of quality wood, using latest techniques of bonding. It has recently developed a Hospital Cot used for heart patients under intensive cardiac care. TANSI's Moped, whose design is completely indigenous and has been evolved by TANSI's own design and engineering staff, will be in the market very soon. Similarly, efforts of TANSI for a collaboration project with the H.M.T. for the manufacture of selected machine tools is in its final stage and a factory for this purpose is likely to be established soon in Ranipet. A TANSI-NID collaboration cell in the field of Industrial design is likely to materialise very soon.

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Tamil Nadu Water Atlas Will show both quantity and quality

The Government of Tamil Nadu has done systematic hydrogeological survey in all areas of the State to assess the ground water potential for further development. We will have shortly not only a water table map but also a water quality map for the entire State.

Aerial photographs covering an area of about 8,460 square miles were used for preparing an uptodate geological map of Cauvery Delta and for planning hydrological studies. Water samples have been collected from different aquifer systems for ground water dating by the Tata Institute of Fundamental Research, Bombay. Electrical Analog studies were done at the Indian Institute of Technology, Madras to study the effect of pumping in order to specify spacing between wells in the Cauvery Delta to avoid mutual interference.

Based on the hydrogeological survey, the aquifers have been demarcated in depth and width and the ground water potential available in Madras City and Palar Basin and it has been ear-marked to the industries established in the Industrial complex at Manali near Madras and for the Madras Atomic Power Project, Kalpakkam. Part of the potential available in Panjetti and Minjur aquifers are extracted and supplied to the various industries.

The Government have approved a scheme for supplying the 11 Mgd. of water available at the Tamaraipakkam aquifer to the various Industries to which the water is allotted. This work is being taken up.

The Ground Water available at Paiganallur in Palar basin has been committed to the Madras Atomic Power Plant. Out of the 6.2 Mgd. available at this site about 4 Mgd. is at present supplied to the Project. As and when the demand increases, the full quantity will be supplied.

Collection of basic data.

Rainfall particulars have been gathered for the past 50 years and the average rainfall is being worked out to arrive at the total quantity of water available in Tamil Nadu. Meterorological information like temperature, humidity, wind velocity, sunshine hours, etc., are also being collected to arrive at the quantity of water which is likely to be lost by evapotranspiration. **Fourteen elementary watersheds have been selected in the districts and necessary equipments are being installed to collect information.**

CONTINUOUS STUDY OF RE-CHARGE RATE GOING ON.

A net work of about 1,660 shallow observation wells have been selected in the entire Tamil Nadu and water level fluctuations are being studied every month. Hydrographs depicting the water level fluctuations for all the observation wells are prepared and compiled. Water quality study is made once in six months to determine the suitability of water for drinking, agricultural and industrial requirements. Ground water level observation is the key information based on which water table maps and isopleth maps of the entire area can be prepared so as to have a comprehensive picture of ground water depletion and recharge in different basins. **Water table map and water quality map for Tamil Nadu is under preparation.**

Geological mapping.

Geological mapping of an area forms the most fundamental requirement for the evaluation of any resources especially for ground water resources.

At present the existing geological maps pertaining to Tamil Nadu available in the Geological Survey of India, Tamil Nadu Circle, Government of India, Madras have already been copied and the base maps are being prepared on 1" to 4 milescale. With a view to improve upon the existing geological maps, field mapping has already been undertaken.

Preliminary photogeological mapping has been done over an area of about 8,000 sq. kms. in Ponnaiyar basin, while work on 10,000 sq. kms has already been completed in other areas of the State.

Geophysical investigations.

Geophysical investigations comprising of surface prospecting and sub-surface prospecting are being conducted throughout Tamil Nadu.

Systematic resistivity survey in a grid pattern has been programmed and is in progress in each district to obtain areas favourable for ground water extraction. So far 1,800 depth soundings covering about one-seventh of Tamil Nadu have been conducted.

Sub-surface prospecting or borehole logging is being conducted in the exploratory boreholes in which resistivity and self-potential logs of the formations are obtained. This includes also electrical logging.

In the selected taluks of Thanjavur, Tiruchirappalli and South Arcot districts covered by the I.D.A. Programme, ground water clearance has been given for all the units proposed in the I.D.A. Agreement. Based on the clearance, appraisal maps are received from the Banks by the Ground Water Division, Thanjavur and No Objection Certificates are being issued.

In the case of the dug well programme in hard rock areas in 18 taluks of Chingleput, North Arcot, Salem and Dharmapuri districts, the Registrar of Co-operative Societies is responsible for rapid survey in those areas and he sends the recommendations to the ground water Division for clearance.

Though systematic hydrogeological survey takes as long as 4 years for a given area, rapid ground water surveys are undertaken in the areas referred to this Directorate for mulating Minor Irrigation Schemes to be financed by A.R.C. and based on this survey, feasibility reports are prepared and sent to Government. So far, 270 reports have been prepared and clearance has been given for more than 50,000 wells and pumpsets both under the A.R.C. and I.D.A. Schemes.

The FAO Experts in the disciplines of Hydrogeology and Hydrometeorology are working in the Ground Water Division and assisting in the Ground Water Investigations in their respective disciplines. Ponnaiyar basin has been taken for detailed investigation by the Expert on Hydrogeology. Proposals for further work on drilling, pump testing, etc., based on photo geological studies and geophysical traverses are underway. Infiltration tests have been completed.

TO SINK MORE WELLS & DEEPEN DRY WELLS —AGRICULTURAL ENGINEERS HELP TAMIL NADU FARMERS

In Tamil Nadu, out of 6.165 million hectares of net area sown, the area irrigated is only 2.59 million hectares which constitutes about 42% of the net area sown. Again, out of the 2.59 million hectares irrigated area, about 69% is irrigated by canals and tanks, and the rest is irrigated by groundwater. It is roughly computed that there are one million wells which extract 3,800 million cubic meter of water.

The Agricultural Engineering Wing of the Agriculture Department is in charge of the following schemes which aim at improving the irrigation facilities from well water in the State.

1. Private Tube Wells. 2. Boring of Wells. 3. Deepening of Wells. 4. Filter Point Tube Wells.

The Agricultural Department is sinking tube wells (Bore Wells) in ryot's lands with the help of Power Drills and Hand Boring Sets, for tapping underground water for irrigating crops. In view of extensive cultivation and also the receding underground water level, the demand for sinking bore wells is on the increase.

The Boring Sets of the Department are supplied on hire basis. Loans are being granted to the ryots concerned by the Land Development Banks and Nationalised Banks on the security of lands to cover the cost of (1) Sinking charges including hire charges on Boring Sets. (2) Pump sets and accessories and (3) Pump shed.

Till the end of March 1975, 23,411 tube wells were sunk by the department. It is estimated that if a well is sunk successfully, it will irrigate an additional area of 20 acres (gross) resulting in an additional production of about ten tonnes of rice *i.e.*, 1/2 tonne/acre. It is anticipated that the tube wells available in the State irrigate an area of about 5.54 lakh acres. During Vth Plan period (1974—75 to 1978—79) it is proposed to sink 12,500 wells.

In view of the gradual lowering of water table observed in some of the districts, the wells yield very poor water supply or even go dry. This scheme is intended to put deep bores inside the wells with a view to tap aquifers to augment water supply. With the long hold equipment, it is possible to sink smaller dia. horizontal and vertical holes in the well extending the depth by 60 to 80 feet thereby increasing the chances of tapping greater number of springs for augmenting the well supply. Loan assistance is being provided by the Land Development Banks and Commercial Banks for meeting costs of sinking etc. This scheme was started as a separate scheme from 1—4—1966 and upto the end of March 1975, as many as 7,851 wells were sunk. If a bore is sunk successfully, it is estimated to irrigate an additional area of 2 acres (gross). It is proposed to sink 4,000 bores in open wells during Fifth Five Year Plan period.

Deepening of Well Schemes

Deepening of wells is taken up in rocky areas by blasting the rock bed 20' to 40' thick and such blasting exposes fresh aquifers which provide additional water supply to the wells and to increase the storage capacity of wells. This scheme was in operation from 1964—65 and till the end of March 75, as many as 10,636 wells were deepended. The ryots were finding it difficult to get the explosives which retarded the progress of this Scheme. Hence, this Department constructed explosive magazines at South Arcot, Trichy, Dharmapuri, Salem, Coimbatore, Ramanathapuram, Tirunelveli and Madurai Districts. The explosives are purchased and stocked by the department and supplied to the needy ryots who engage departmental Rock Blasting Units. Construction of similar magazines in the district of North Arcot for this purpose is under progress. Vans are also provided to transport explosive materials to these departmental magazines.

It is proposed to deepen 10,050 wells during Fifth Five Year Plan period. If a well is deepened it is expected to irrigate an additional area of 2 acres (gross).

Under conventional method, manual labour is engaged to remove the blasted materials. This method takes considerable time resulting in idleness of equipment and also costs much. In order to utilise the equipment to maximum advantage and to reduce the cost of removal of debris, the department has designed a suitable debris remover (crane). The department has programmed to supply debris removers also on hire along with Rock Blasting Unit as the farmers insist on supply of debris removers with Rock Blasting Unit. Loan assistance is being provided by the Land Development Banks and Commercial Banks for meeting the cost of deepening the wells.

Filter Point Tube Wells Scheme

The Filter Point is a device for pumping out water from sandy water bearing strata found within 25' to 40' from ground level.

In Tamil Nadu, the construction of Filter Point Tube Wells for encouraging irrigated cultivation was initiated in the Fifties, before the commencement of the First Five Year Plan. During the first Five Year Plan, 2,650 Filter Points were sunk in this State.

During the 2nd Five Year Plan, 2,765 Filter Points were sunk. During the IIIrd Five Year Plan period, the tempo was almost doubled and 4,065 Filter Points were sunk. During the last year of the 3rd Five Year Plan a Crash Programme for Filter Points was initiated in Thanjavur district in order to sink a large number of wells in a shorter period to tap ground water to supplement the canal water during the lean periods. These filter point tube wells help farmers to raise nurselings well ahead of the opening of Mettur Dam Canals ; if the farmers have to entirely depend upon Canal water even for raising nursery, generally the harvest coincides with the onset of North East Monsoon resulting in loss of valuable paddy crop. If nurseries can be raised before release of canal water transplantations can be done immediately after release of canal water. As the crop will come for harvest much earlier, it is possible to raise second crop by supplementing canal water with the help of Filter Points and Tube Wells. To get maximum yield and to bring more area under second crop, it is programmed to sink a large number of Filter Point Tube Wells and Tube Wells with the assistance of World Bank. This scheme is to be jointly executed by the Agricultural Engineering Wing Agriculture Department, the Ground Water Directorate and the Co-operative Department. During this plan period, it is proposed to sink 7,000 Filter Points and 1,190 Tube Wells in Thanjavur District.

So far, 29,299 Filter Point Tube Wells (upto March, 1975) have been sunk. If a Filter Point is sunk, it is expected to irrigate an area of 10 acres (gross). 10,000 wells are proposed to be sunk during Fifth Five Year Plan period.

MANKIND'S MOST USEFUL DISCOVERY- THE SOAP

Soap is one of the greatest discoveries dating back to the very ancient times. The earliest known records show that Babylonians, Sumerians, Eygptians and Phoenicians (2,800 B.C. to 500 B.C.) were using a salve-like preparation obtained by boiling together oils and ash. More generally used cleaning agents in those days were natural soda ash (called natron), natural earths and wood plant ashes. The word soap is poss.bly derived from Latin " Sapo " which means a pasty mass, a pomade. The Greeks and Romans (800 B.C. to 500 A.D.) who were very fond of taking baths, whether cold, hot or vapour baths, rubbed oil on their bodies and cleaned them with mechanical agents like bran, sand, ashes, pumice, clays and juices of plants.

Pliny in his book " Nahorates Historia " (79 B.C.) has described the boiling of goat's tallow and beach ashes. This and such other preparations were used as a cosmetic and a pomade for application of hair and skin.

The credit of discovering soap goes to the Germans or the Tartars, about the beginning of the Christian era. By the 9th century, Marsielles in France and Genoa, Savona and Venice in Italy had already become active centres of soap manufacture. The industry was flourishing in many countries in Europe by the 12th century. The animal fats were gradually being replaced by vegetable fats, especially by olive oil which was abundantly available in the Mediterranean region. Alkali was available in the form of plant ashes which were rich in potash, and sea-weed ashes which were rich in soda-ash. These were used in the preparation of soft and hard soaps. The availability of soda ash by the progress of chemical technology and later of caustic soda gave a very great impetus to the soap industry.

Soap making was a house-hold industry, especially in the rural areas up to the 20th century. Later it had to decline as a natural sequel of several factors such as better and more uniform quality of the factory product, its low price, intense advertisement by soapmakers and changes in the fuel used at home.

Science could not Improve Upon Experience!

Soap-making involved the boiling of large quantities of fats and the alkali in such correct proportions and to such well-timed temperatures that it called for skill and long manual experience, nourished by critical observation of each and every detail of the boiling mixture in the pan and subsequent procesing of the boiled mass. On the basis of such observation, the early soap-boiler came to learn the properties of the raw materials, to devise the most suitable equipment-pans, furnaces, coolig frames, cutting tables etc. and to fix up the sequence of the operations. It is indeed remarkable that such a process has been evolved without any scientific information and remains the same in its fundamentals till today though substantiated by the scientific researches of the century. The art of soap making is thus far, far, ahead of science.

Inspite of a large number of flourishing centres in Europe, the factory-made laundry-soap, was not within the reach of the public, even as late as 150 A.D. Toilet soap was a luxury to be enjoyed by the nobility. Specially perfumed and coloured soaps were very highly-prized gifts to be exchanged among the royalty.

With the turn of the 19th century, however, the pace of development has been remarkably speedened. Several factors like economic, technical, political and social, helped to hasten this process. The discovery of Le Blanc in 1787 of how to make soda ash from common salt, an abundant supply of alkali was assured. Trade by sea to other countries increased. This made an abundant supply and new sources of oils and fats easily available. Due to their political influences many European countries had easy access to far off places in Africa, America and Asia which were rich in Oleagenous materials such as copra, palm, cottonseed and tallow. With the increasing industrial activity in Europe and the change in the pattern of living made the use of soap a prime necessity. Thus, the expansion of the soap industry was the result of rapid industrialization.

The real development in the soap industry, has however, been in its technological aspects. Discovery of new raw materials and of new methods of processing the older materials has widened the field of selection and has made the industry more flexible. Progress in the different branches of engineering has had its beneficial repercussions on the soap industry as on any other industry. Use of non-rusting and non-corrosive alloys in plan construction has led to improvements in the quality of the products. New techniques, continuous operations, novel designs and automation have brought the industry to a high pitch of efficiency and economy. High pressure saponification, centrifugal separation of soap, counter-current washing, press-cooling. chilling on rolls, continuous drying, dehydration of spraying and vacuum plodding are instances of novel applications of equipment and operations..

THE SOAP IN VEDA AND AYURVEDA

To mix up Vedas and soap might appear incongruous. Yet the Veda being the earliest records of the Ancient Indians give a clue to the then knowledge of chemical and practical arts. The use of metals, alloys, fermented liquours, dyes and several drugs obtained from the vegetable kingdom for the preservation of health and for the curing of diseases are mentioned therein. The smruti, are codes of behaviour on daily routine, laying emphasis on personal cleanliness. The daily routine, any ceremonial or function has to be started with the bath.

Ayurveda, the Indian Medical system discusses the ways and means of keeping the skin clean, soft and healthy. Daily bath with water was naturally essential, but it was to be preceded and followed by the application of Saponaceous, fragrant or soft plant materials. The methods were broadly classified as 1. Astringent plant materials : Amla. 2. Aromatic plant materials : Nagar Motha 3. Oily materials and oils (Pastes made from almonds or sesame or sesame oil 4. Lather producing materials (Ritha, Silkakai) 5. Miscellaneous materials : clays, gram flour, milk, honey, lime juice. Even to this day, many such powders and oils are used in large quantities on festive and ceremonial occasions.

For cleaning of garments, in addition to acqueous extracts of saponaceous plant materials, clays both neutral and alkaline—and extracts of plant ashes were used.

Although the ancient Indians possessed some knowledge of carbonates, caustic alkali and the vegetable oils which must have been available in plenty, they were not led to the discovery of soap making while under similar circumstances the contemporary Gauls and Germans discovered that art.

It is presumed that the art of soap-making came to be acquired in India after the contact between East and west first through commerce and later by conquest. However, the first recorded evidence is that the first modern soap factory in India, was established in Meerut in 1897 under the name of the North-West Soap Company.

The " Swadeshi " movement of the year 1905 and the First World War gave some impetus to soap manufacture in this country in a small way. The " thirties " of this century saw the establishment of big organized units, and this was the first phase of expansion. The se-second phase of expansion was during the second world war during the " forties " which gave a fillip to the industry. Imports of soap which stood at the value of Rs. 2 crores in the year 1920-7, dropped to Rs. 18 lakhs in the year 1940-41, indicating a rapid growth of the Indian industry. Today, there is a complete ban on imports of soap.

Structure of the Indian Soap Industry

The Indian Soap Industry is made up of four sectors 1. registered organized units, 2. Unregistered organized units,3. Cottage scale units and 4. Cooperative village units. The first sector consists of large scale manufacturers who produce full-boiled settled washing soaps and milled toilet soaps. The soap making units are generally attached to oil mills or yanaspati plants so that the soapstock obtained as a by-product during refining of soft and hard fats serves as a cheap raw material for soap.

The unregistered organized units produce mostly washing soap and utilize both the full-boiled as well as the semi-boiled methods.

Factories in sector 1 produce high quality soaps and maintain a uniform standard. Products of many of them are known all over the country. Units in sector 2 produce both unfilled and filled soaps of a standard quality. Market for their goods is usually restricted either to a district or the State, Factories in sector 3 almost invariably produce heavily filled soaps for the cheapest market. The products cannot be expected to be of high quality or uniform standard. They have only a local clientele.

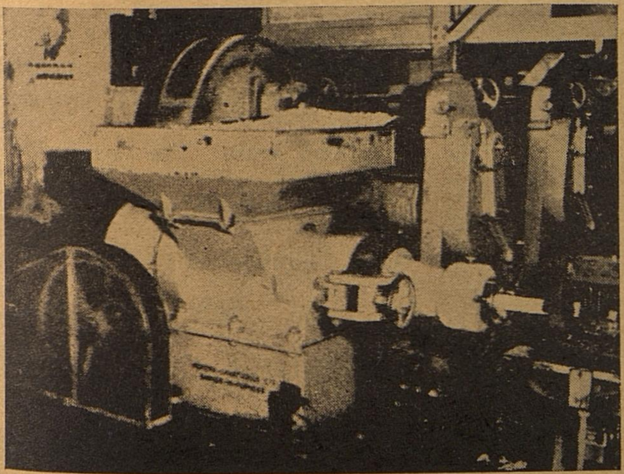
Raw Materials :—

The fatty raw materials used in the soap industry are coconut oil, groundnut oil, cottonseed oil, castor oil, Mowrah fat, Palm oil, Animal tallow, Hydrogenated oils, Linseed oil, Soapstock and acid oil, fatty acids and Rosin.

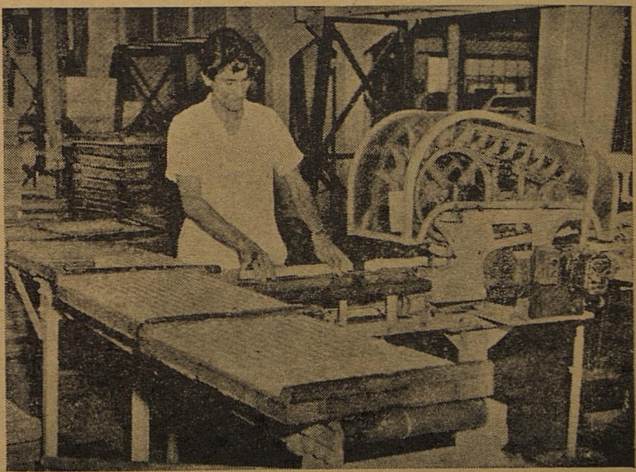
Caustic soda, caustic potash and soda ash are also used in the manufacture of soap. Some of the other additives are common salt, perfume, colour, sequestering agents, optical bleaches, germicides etc.

The toilet soaps are made from coconut oil, groundnut oil, palm oil and tallow, while for washing soaps, additional fats like mowrah, fat and castor oil and soapstock are used.

The most common filling material is sodium silicate and mainly silicated soaps may contain as low as 20% fatty matter. A low grade soap which is very popular with the dhobies and therefore called the dhobi soap is prepared out of the



SOAP PLODDING



Automatic cutting of plodded soap

filter mud (spent bleaching earth) available from the refining and vanaspati factories. Soap is also available in other forms such as chips, flakes, powders, etc. They have a limited mrket, that too in the urban areas.

Soap-making as a Cooperative Village Industry :—

The production of vegetable oils and soaps has been taken up as one of the village industries, and therefore, a separate section was established in the Khadi and Village Industries Commission to look after soap manufacture. The commission has commenced establishing oil pressing cum-soap making centres in different parts of the country. These centres are given financial assistance—a part as a grant and the rest as an interest free loan. Training centres have been established to train operators, chemists and supervisors in their respective jobs. Regional Testing Laboratories and a central Research Institute for Village industries have also been established. It is their responsibility to render technical aid, maintain quality control on the products and develop methods of analysis, methods of production and equipment suitable for this type of manufacture. Thus these units are able to turn out soap of very high standard for washing as well as toilet purposes.

Today, the village soap industry is competing with the large-scle manufacturer by using non-edible oils. But it will not be isolated from the impacts of modern facilities like transport, power and communications, nor will it be restricted to age-old methods. New methods, new implements and new techniques will be adapted accordingly. As a result of experience and continuous experimentation, the method of soap making and the equipment employed are bound to be improved.

Soap Products :

For ease in its handling or according to the customer's preferences and specifications, or by the ingenuity displayed by the manufacturers in attracting customers, the final product is marketed in all kinds of shapes, sizes, and forms.

Increase in soap production :

Soap production has recorded a 25 percent increase in 1975. During January—September this year, production amounted to 2,01,406 tonnes as against 1,61,281 tonnes during the same period last year. A significant rise in the production in the organized sector contributed to this increase.

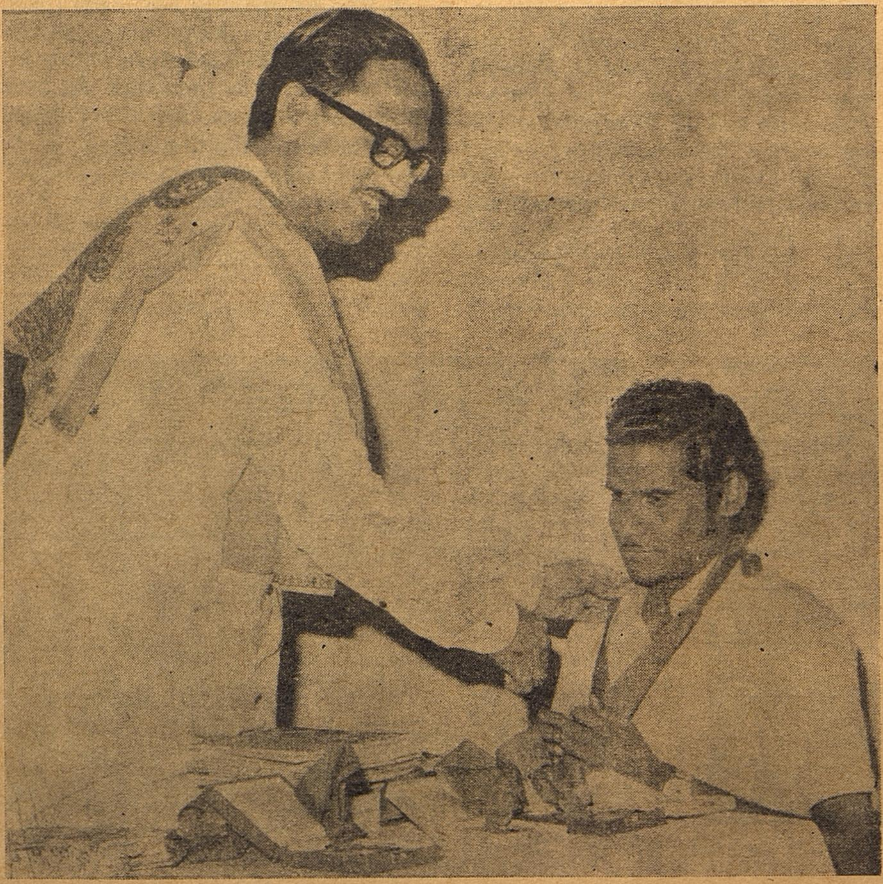
A new variety of low-priced toilet soap ' Janata ' soap was introduced during the year by many units in the orgonised sector and production of this variety totalled 5,454 tonnes, between January and September 1971.

The Indian standards Institution (ISI) is now working out ISI specifications for this variety of toilet soap for protecting the interests of the consumers as well as improving its quality and packaging.

The import of tallow, except for marginal quantities against export licences, was discontinued by the Government following negotiations with the Indian Soap and Toiletry Maker's Association, representing the organized sector of the industry. The country is expected to save Rs. 9 crores in foreign exchange annually as a result of this measure.

The organized sector of the soap industry is now increasingly using minor oils like rice bran, neem karani and mohwa oils. Use of such minor oils by the soap industry has not only reduced the pressure on the edible varieties of oil earlier used by them, but has also given employment opportunities to a large number of people.

—RAJALAKSHMI BHARATI.



The Association of Writers for Children had awarded the Gold Medal donated by AVM Charities for the best Tamil Children's Literature to the manuscript copy of his book entitled ''ஆடுவோமே, பள்ளு பாடுவோமே,'' entered by P. V. Giri, of the editorial section of ' Tamil Arasu '. The Award was presented as part of Children's Day Celebrations on 14—11—1975 at Rajaji Hall by Thiru K. Anbazhagan, Minister for Health.

STEPS TO IMPROVE THE EFFICIENCY OF WOMEN LABOUR FORCE

By

Kumari R. Padmavalli, M. A.,

Director of Statistics, Govt. of Tamil Nadu.

A study initiated by the Committee on the Status of Women in India in 1973—74, covering a sample of 200 undertakings in both private and public sector, has reaffirmed the position, that the practice of relegating women to limited and lower levels of employment, discriminatory wage payment, and retrenchment is quite pronounced, in spite of a spate of labour legislations.. It is therefore needless to review the experience of the vast majority of women working in the unorganised sector. But it is recapitulated for the purpose of examining what would be done to improve their lot.

Farm labourers including a sizable number of women labour perhaps number about 47 million and they form approximately 38 per cent of the total Agricultural Workers in the country. In a far flung country with cultural diversities, complex tenure systems and strange feudal relationships, it is difficult to conceive of anything like a uniform pattern of minimum wages. The social and economic status of labour varies from region to region. For instance in Punjab, Haryana, Jammu and Kashmir and Assam, the proportion of farm labourers is relatively small, whereas it is very high in southern States and in U.P., Bihar, Orissa and West Bengal. In certain Stateslike Andhra Pradesh, Bihar, Maharashtra, Uttar Pradesh, Tamil Nadu and Madhya Pradesh there is a concentration of agricultural labour accounting for around 70 per cent of the total number of farm workers. Andhra Pradesh, Madhya Pradesh and Orissa have been consistently paying miserably low rates of wages. A relatively better record is to be seen in Haryana, West Bengal and Assam. The economic conditions of the agricultural labourers or the landless labourers, in general, has been continuously deteriorating in India.

The major difficulty is that no accurate information regarding the living conditions of landless labour, their indebtedness etc., is available. The information available on these aspects, is either inadequate or very old.

The two All India Agricultural Labour Enquiry (ALE) conducted by the Ministry of Labour and Employment for 1950—51 and 1956—57 revealed 28 paise and 27 paise, respectively as per capita income of agriculture household. This level tallies with that observed in West Bengal Surveys in 1972—73. It reveals the deplorable and continuously deteriorating economic condition of the rural labour, during all the years, despite the growing prosperity of the agricultural sector.

This situation has been an outcome of the continued negligence of most of the State Governments in the revision of minimum wages and the meticulous observance of its implementation. Since 1969, only very few States have revised wages. **It may be gratifying to note that Tamil Nadu revised the wages during 1973 and has now again set up a Minimum Wages Committee for revision.**

It is therefore observed that with the meagre wages, the labourer is forced to have a hand to mouth existance. Fortunately Prime Minister's recent directive has come in time to tackle this problem relating to this vulnerable section of the society which can look forward for improvement in their living conditions in the near future.

Nutritional Status :

Nutrition is an important factor in the development of "Human Capital". It works in two ways :

1. reduces the loss in man-days due to sickness and other nutrition — related ailments ;
2. improves the quality of the labour.

It is all the more true for the women labour force because, their nutritional status is comparatively neglected. Sex preference and preferential treatment has resulted in a comparatively poor nutritional status for women.

A diet survey conducted by the National Nutrition Monitoring Board of the Indian Council of Medical Research has shown that caloric intake is inadequate in all the States in the 'very low' and 'low' income groups. The details of intake by women is given in the table below :

TABLE I

INTAKE OF FOOD BY WOMEN—ALL INDIA

Food	*Actual intake gm.*	*Recommended Allowance*	
		Non-vegetarian gm.	*Vegetarian gm.*
(1)	(2)	(3)	(4)
Cereals	333	450	450
Pulses	15	65	80
Leafy vegetables	9	150	150
Other vegetables	23	75	75
Roots & Tubers	3	75	75
Fruits	4	30	30
Milk & Milk Products ..	23	225	325
Fats & Oils	12	55	50
Meat & Fish	18	30	..
Eggs	12	30	..
Sugar & Jaggery	15	50	..

FAMILY PLANNING FACILITIES STRETCH MORE MEDICAL FACILITIES TO WOMEN WORKERS

The survey has also revealed that protein inadequacy is invariably associated with caloric inadequacy in both these income groups in all States except Kerala where a small percentage of households (1.9 per cent) of the 'very low income' group had protein inadequacy with caloric adequacy.

Medical Facilities :

Through the implementation of Five Year Plans, the Government have managed to extend medical facilities throughout the length and breadth of the country. The labour under the Organised sector have the additional advantage of treatment under Employees State Insurance Scheme. This scheme provides the following six benefits to the labourers coming under its purview :

(*i*) Sickness benefit,
(*ii*) Extended sickness benefit,
(*iii*) Disablement benefit,
(*iv*) Dependents' benefit,
(*v*) Maternity benefit, and
(*vi*) Medical benefit.

Maternity benefit as cash benefit payable to a female insured person for the specified period of absence from work, for a confinement. The daily benefit rate is double the sickness benefit rate and is thus roughly equivalent to the full wages. Benefit is paid for Sundays also, covering a period of 12 weeks.

Medical benefit is provided to the insured persons and their families under the medical benefit scheme. This consists of out-door treatment, inpatient treatment, all necessary drugs and dressings, pathological and radiological investigations, domicilliary visits, ambulance services, specialist consultation and care, antenatal and post-natal care, emergency treatment etc.

It is gratifying to note that the medical facilities provided for the labourers in organised sector go a long way to maintain them in good health and efficiency. While, on the other hand, the unorganised labour mostly working in the rural areas, suffer for want of the minimum medical facilities.

Another welcome feature is, that family planning services are made available to the people much more widely then hitherto. The various family planning programmes like sterilisation, IUCD insertion, application of conventional contraceptives have made good progress in India. It is needless to say that labourers, and in particular, the women labourers will be much benefitted by this programme.

Housing Condition :

Next to food, housing is an essential factor that affects human life. This is all the more important in the case of labour force who return after a day's hard work. But in practise, most of the labour force in India, are yet to be provided with adequate housing facilities. In the rural areas, they live in kacha houses (small thatched huts) and in urban areas, they live in slums which are extremely insanitary and over crowded. Labour employed in plantations, though assured of statutory protections in this regard, are also subjected to inadequate housing facilities or complete denial of such facilities, particularly where casual labour is involved. The problem of labour housing has to be tackled more efficienly.

Social and industrial laws have been worked out on a sound basis ; but due largely to ignorance, illiteracy, die-hard traditions and customs and superstitions, honesty and obstinacy and indifference on the part of the people and lack of official implementation, the laws have not been satisfactorily implemented in many cases. Villages and slums especially have to be visited by officials and voluntary workers, and the people should be made aware of the laws ; if we are to assure women workers be they in factories or farms, all the rights they derive from these Acts.

Besides the facilities offered under the above major schemes and legislations, the following factors are worth examination.

Provision of essential commodities through family cards :

Essential commodities comprising of food and non-food articles may be arranged to be supplied at nominal rates to the labour force working under the organised and unorganised sectors. The Rural Co-operative societies and the urban consumer societies, may be entrusted with the distribution work.

Provision of adequate cheap transport:

Majority of the labour force working in the unorganised section of Agriculture Industry, live in rural villages and therefore the transport problem does not affect them to the extent as it affects their counterpart *viz.*, the labour force in organised sector who live in semi urbanised and urbanised areas. For this portion of the labour force, steps may be taken to provide cheap transport facilities. They may be paid some transport allowance wherever housing facilities adjoining to the work spot have not been provided for, by the management.

Establishment of Day-care Centres :

In the Factory Act, 1948, provision has been made to compulsorily establish creches wherever more than 50 women employees are involved. In the case of organised sectors, strict implementation of the provisions of the above Act should be observed. In the case of unorganised sectors, the management should be made obliged to provide facilities for those women labour with children of 6 years and below. A high level committee may be set up by the Government to assess the extent of help to be provided in this regard.

Provision of Recreational Facilities :

No provision is available to provide recreational facilities such as games, cultural programmes etc., at periodical intervals, to the labour force working both under organised and unorganised sectors. There appears to be hardly any recreational facilities for the women labour force. Cultural programmes, educative lectures, good film shows, provision for games will certainly go a long way in improving the efficiency and the outlook of the labour force. This aspect has also to be studied.

In our country the women's role continues to be that of wife and mother whether she is a wage earner or brings additional income to the family. Her responsibilities both physically and mentally are ever increasing in the changing times of today.

In this International Women's Year the need for an overall uplift of women has been accepted by one and all. Indeed a worthwhile policy on women would bring about a transformation not only in the fortunes of women but in their role in the family and thereby in the social fabric in its entirety.

NUTRITION AND GROWTH OF INDIAN GIRLS

By
RAJAMMAL P. DEVADAS

The fascinating process of human growth and development are influenced by a number of factors which constitute heredity and environment. The type and quality of the interaction between heredity and environment determine the all round development of the individual. From the moment conception takes place with the fusion of the parent cells, a pattern for future growth and development is laid. To what extent and in which direction a child's potentialities will be realized depend upon the environment in which he grows and develops. The pattern of growth though genetically determined is strongly influenced by the dietary intake. Nutrition is essential in childhood for optimum growth. The growth pattern of a child is useful index for judging his nutritional status. Body measurements, such as, heights and weights, if properly obtained and interpreted, help to evaluate nutritional status.

Growth spurt :

From birth onwards the baby grows in height and weight but the rate of growth is different in relation to sex and other factors. Growth in height like all other human measurements, is not uniform throughout life. The maximum rate of growth occurs before birth, in the foetal life, and thereafter it is progressive slowing down, though at birth the baby is still growing very fast when compared with the infant and child. In the first year of life, the body length increases by about 50 per cent (from 50 cm to 75 cm) and in the second year another 12 to 13 cm are added. Thereafter, growth in height settles down to a rate of about five to six cm every year until adolescence. Although the pattern of growth is similar in boys and girls from birth till adolescence, the rate of growth differs considerably, after the girl reaches puberty. During adolescence a marked rate of increase in height occurs suddenly and remains fairly steady. The growth spurt starts at the age of 10.5 to 11 in girls and at 12 5 to 13 for boys although wide variations are possible. The steady increase in the rate of growth is maintained for about two years in both sexes.

During the growth spurt, boys add something like 20 cm to their height, mostly because of the growth of trunk (10 cm/year). Girls gain about 16 cm height. The spurt is followed by a rapid slowing of growth. Indian girls reach 98 per cent of their final height on an average by the age of 16.5 years, whereas boys reach the same stage at the age of about 17.75 years.

By the end of the first year, the birth weight is approximately trippled. By the end of the second year, it gets quadrupled. After the second year, the increase is steady at the rate of about 2.25 to 2.75 kg a year until the adolescent spurt occurs. During the adolescent spurt, boys gain 20 kg and girls 16 kg weight respectively. Table I shows the heights and weights of Indian girls and boys from the first year of life till 18 years.

The heights and weights of girls are slightly lower than those of boys at all ages, except from the tenth to thirteenth year during which the adolescent spurt occurs in girls. During this period of three years, girls are ahead of boys in height and weight, but show a low rate of growth thereafter.

Birth-Weight :

Although there is not much difference in height at birth, the weights of Indian babies at birth and their subsequent growth pattern from birth to adolescence, are lower than that of their Western counterparts. The American children are taller and heavier than the Indian children of the same age group.

ADEQUATE NUTRIENTS

Sufficiency of food and nutrients is essential for normal growth and prevention of malnutrition. Indian girls who are well-fed grow taller and heavier than those who are poorly fed.

Records of heights and weights should be kept regularly to help parents and teachers to assess the growth of children. As a large section of the population will not have facilities at home to record the weight of children the records should be kept in the school.

Mid-day meals or nutritious snacks in schools improve the growth of children of the school-going age. Apart from the formal education the children get in the schools, nutrition education and supplementary feeding programmes should be conducted in order to improve the growth of undernourished children.

Until recently, girls were married immediately after the attainment of puberty or before, which imposed a strain on their growth pattern. The census data of 1961 showed that the marriage age of girls was 12.5 years in 1891 and 15.5 in 1961. Many of the girls are likely to become mothers when they are still in the adolescent age which shows there is an extra nutritional demand on the adolescent girl. A food habit survey conducted in Tamil Nadu shows that only 74 per cent calories and 92.97 per cent protein needs of adolescent girls are met, while the extent of fulfilment for the other age groups was higher. Table II shows the calorie, protein requirements and intake of females.

An intake of 600 to 630 IU of vitamin A, 300 to 515 mg of calcium and 26—31 mg of iron by adolescent girls was also recorded in this study.

Adolescent girls :

The weak link in the segment of life-cycle appears to be the adolescent girl, in spite of the fact that it is the health and proper nutrition of this part of population, that will upgrade the quality of future children and adults. A weakened, undergrown, ill-nourished young woman at marriage is already at a disadvantage for producing the kind of children that are desired. Conversely, a strong well-nourished girl will be much better able to withstand the effects of subsequent nutritional stresses she may encounter. Hence attention should be concentrated on this particular age group to prevent infant and maternal

mortality and to improve maternal and child health as malnutrition has a definite impact on fertility and reproduction. The studies of the National Institute of Nutrition have shown that 16—19 per cent of pregnancies among poor lead to wastages which are also common in women belonging to the low socio-economic groups subsisting on 1850 calories and 44 g protein daily.

Preferential Treatment :

Unfortunately in the tradition bound societies in India, preferential treatment with regard to diet is always given to the man of the house and the sons, as they are the " wage earners," " more valuable economically " and bear the burden of the family. As soon as a baby boy is born, great importance is given to him and he gets great attention from all the family members. The educational and medical facilities given to boys are also better than what the girls get. That is the reason why boys outnumber girls in schools. The girls are needed at home to perform household work and to look after the younger children, while the boys are sent to school for education. Thus from childhood, women are trained to serve the family and make sacrifices throughout their life-time. These discriminations are reflected in the life expectancy of females in India. According to the Planning Commission's Projections for the period 1971—76, it is 49.6 years for females and 51.3 years for males, and for 1976—81 it is expected to be 52.6 years and 53.8 years respectively.

This is the opposite of what is prevailing in other developing countries, where the life expectation is more favourable towards women. The female life expectation relative to male, expressed in percentage is 97 for India and ranges for 100 to 111 in all other developed and developing countries.

The reasons expressed are the intra-family distribution of nutrition and the incidence of maternal diseases and deaths which are higher in India than in other countries. Female undernutrition in general and maternal deaths from infections, and unhygienic conditions, adapted during child-birth and other diseases are strongly linked with poverty. Some of the bias in the intra-family distribution arises from deliberate self-deprivation by women because they tend to believe that the earning members are more valuable than those who do domestic work and child rearing which they consider is devoid of economic value. Even when a family is not poor and its food supply adequate, the women may still suffer from nutritional deficiency on account of customs, wrong beliefs, undesirable food preparation practices and restrictions in the amount, composition and number of meals on certain days.

All these practices influence the nutritional status of Indian girls and young women. It is indispensable that women are educated on all these aspects. This will help them change their attitudes to bring about a normal growth pattern among Indian girls and boys of adolescent age.

TABLE I

Heights and Weights of Indian Boys and Girls from 1 to 18 Years

Age in Years	*Height in cm.*		*Weight in kg.*	
	Boys	*Girls*	*Boys*	*Girls*
(1)	(2)	(3)	(4)	(5)
1	72.5	72.5	8.5	7.5
2	87.5	86.6	12.6	12.3
3	96.2	95.7	14.6	14.4
4	103.4	103.2	16.5	16.4
5	108.7	109.1	18.4	18.4
6	118.9	117.3	22.1	21.4
7	123.3	122.7	24.5	24.8
8	127.9	126.8	26.4	26.1
9	133.6	132.3	30.0	29.7
..	138.5	138.5	32.4	33.5
10	143.4	144.1	35.3	36.5
11	143.4	144.1	35.3	36.5
12	148.9	150.3	38.8	42.6
13	154.9	153.0	42.9	44.4
14	161.7	155.1	48.3	46.7
15	165.3	155.3	52.2	48.2
16	168.4	155.4	55.5	49.8
17	168.9	156.4	59.0	49.9
18	169.9	156.8	61.1	50.1

Ref : ICMR 1968.

TABLE II

Calorie, Protein requirements and intake of females per day per Individual

Age Group	*Calories*			*Protein (g)*		
	Need	*Intake*	*Need met %*	*Need*	*Intake*	*Need met %*
1	2	3	4	5	6	7
MONTHS—						
0— 6 ..	530	445	88	8.5	8.1	95
7—18 ..	980	635	65	12.0	10.3	86
19—30 ..	1,100	790	72	13.0	13.1	10
31—59 ..	1,230	945	77	15.0	15.9	106
YEARS—						
5— 9 ..	1,530	1,225	80	20.0	21.8	109
10—14 ..	2,150	1,615	75	30.0	29.1	97
15—19 ..	2,560	1,895	74	38.0	35.0	92
20—24 ..	2,400	1,920	80	38.0	36.9	97
25—29 ..	2,255	1,985	88	38.0	37.2	100
30—39 ..	2,120	1,885	39	38.0	37.2	98
40—49 ..	2,010	1,910	95	38.0	38.0	100
50—64 ..	1,890	1,795	95	39.0	36.1	95
65— ..	1,770	1,715	96	38.0	35.0	92

THE CHALLENGES FACED BY WOMEN TO SUCCEED IN THEIR CHOSEN CAREERS

A COMPARATIVE STUDY OF CAREER WOMEN IN INDIA & ABROAD

'SARASIJA'

All over the world, women, today are entering various professional areanas, even those considered to be virtually male preserves. This becoming increasingly evident, even in the so-called backward areas and the ill or poorly developed nations. In India, this trend has become marked, after Independence, especially, after the adoption of the constitution which provides for equality of sexes in all things including job opportunities. The reasons for such an entry are not too far to seek.

The main reason which is perhaps true the world over, is monetary. Women have taken to work not as a result of any compulsory inherent need but rather as a necessity. Given a chance most women would perhaps choose to remain at home, making every effort to run a happy home. It is only less than 10% of the women who would like to take up a job as a career. The rest of the women in various professions are there as a result of a variety of reasons the chief amongst which is the need for substantiating the family income. Faced by the ever-spiralling rise in prices of most commodities essential for every day life, and the ever shrinking value of money, women from all walks of life are forced to lend a hand to supplement the family budget. In a large percentage of cases, women are found to act as the bread-winner as well. This is becoming increasingly true in a number of countries and equally true in a country like the U.S.A. where the girls and boys opt to live away from their parents even at such as early age as 18 years, when it becomes a necessity to find a job for a living.

If one sets monetary considerations aside one is appalled to find that hardly 10% of women really desire to take up a profession. This applies to women both in India as well as other countries. In India the percentage of working women to the total working population is appxoimately 19% and most of these are in agriculture and other unskilled jobs. Considering the vast potential of women power available in India and the State of Tamil Nadu *i.e.*, 49% and 49.4% respectively this amounts to a huge national waste of enormous material of value-controlled harnessing of such powers could certainly lead to more prosperity and better growth of the nation. In contrast the literacy and employment rates are very much higher in the countries abroad. Lack of motivation appears to be the main factor responsible for this state of affairs.

Brain-washed into Marriage

Lack of motivation in its turn due to various factors such as upbringing, false values, misleading impressions, differences in education and the existing social patterns of life and human behaviour. Only 2.3% of all educated women are employed as against 18.72% of illiterates. Thus both in India and abroad, almost all girls are brought up with the idea that marraige is their goal in human life, all other things being secondary. Even talented young girls with enthusiasm, interest and driving ambitions are brain washed into believing that a career is only of secondary importance. Thus we find that few students go on to take up any important profession.

If we now turn to the type of professions taken by women, in India, this can be divided easily into professions of major importance and others. The work of the rural women and the industrial women have been already considered at length by the Altrusans from Nagpur and Bombay. (The major professions would include such as that of Doctors, Lawyers, Executives in the Administrative service, Industries, etc.) I will come to this presently.

The different types of careers available to the woman in the U.S., are too many to enumerate and yet there are certain striking features which merit mention. One of the most impressive difference is the paucity of women in the higher professions such as either Doctors, Engineers, Administrators etc. Most women act as Stenographers, Secretarial Assistants, Sales Girls, Telephone Operators, Receptionists, Shop Assistants etc. Teaching and Nursing attract a dedicated lot of women and one finds few women in senior executive professions. The reason for these are not too difficult to understand the major reason being the fact that even in the U.S., women are expected to marry and have a home with the associated responsibilities. As a matter of fact, the mental outlook of women is completely moulded in such a fashion that they are expected and required to get married before the age of 30, so that, the working woman who is unmarried, is looked upon as someone who is not mainly interested in her job but as a person who is marking time, till her time of mariage.

The Big Impediment

Though this is true in more than 70% of women, the other 30% who would like to have a career are also made to believe that a career apart from home life is un-

Indian Society gives Better Scope to Women for some Professions.

necessary and at best can only be considered to be something of secondary importance in the life of a woman. This attitude is present even in such an enlightened country as the U.S.A. Such being the case the women who still wish to take up a job as a career are at a very big disadvantage. The entire mental outlook is completely changed and the man in the office also regards her as a potential candidate for deserting the office any time after marriage.

As far as the medical profession is concerned, I can speak with confidence regarding this unequal treatment given to women in the U.S. If a lady doctor wishes to be a Surgeon and applies for a Surgical residency in the U.S., even in this englightened year, more questions are asked of her rather than of her male colleagues and she is made to feel that it is too difficult for a mere woman to train as a surgeon and practice surgery. Rather than face such gruelling questions and the hard time given to them, the girls opt for other openings conceded to them. **Thus we find that choice of a particular type of profession also depends upon a number of variables. Similar attitudes prevail in India, and choice of profession by women. However, surprisingly, certain professions attract and absorb more women in India than in the U.S. ; for example the professions of Doctors, and Lawyers. Here again it is not perhaps the Indian woman's eagerness to be a Doctor or a Lawyer that matters, rather, that, the Indian Society tolerates even permits and recognizes the need for women Doctors and thus does not make it difficult for her.**

One Swallow does not make A Summer

Though, when it comes to the higher specailities such as Medicine and Surgery one finds that women are discouraged from such careers and thus we find women Doctors permitted to be Obstetrician, Gynaecologist and Paediatricians. However if a woman feels strongly motivated and inclined to spealise in a particular speciality, she not only does very well, but manages to outshine others. I am not here referring to exceptions and Nobel Laurettes like Madame Curies but to the doctors at present in India. Dr. Padmavathi is a case in point, as a result of her own efforts, she has now become a renowned Cardiologist not only in India but abroad as well. Dr. Padmavathi has just been elected to the Indian Academy of Medical Sciences. Sister professions such as Chemistry boast of the eminent services of Dr. (Mrs.) Ashima Chatterjee, President of the Prestigious Indian Science Congress for the past year.

The academic world as a matter of fact can easily boost of the presence of a large number of women on its rolls. In India, alone there are over 20,000 doctors, lawyers, architects, engineers, writers, artists and sculptors. In addition there are nearly 23,450 women teachers in the Universities and graduate women teachers in schools, account for 94,200.

The Indian Administrative Services have had an increasing number of women in the recent years and women candidates have been seen to top the lists of compeitive examinations held in the country.

We have women in the Armed Forces, — a contingent of Parachute jumpers is a recent addition ; — in the Police and even in the constabulary. Women in executive positions are found in Broadcasting and T.V. and various women have lead or taken a large part in the U.N. Delegations. Women Ambassadors, Prime Ministers and Chief Ministers may be few, but they have been and are in India.

Only 2.3% educated women are employed

Though the various different professions enumerated above appear to yield a satisfactory picture, the number of women so employed is woefully small. If one recalls the statistics, I will reiterate once again that it is only less 2.3% of educated women in India who are employed as opposed to 70—80% in countries abroad.

If we now turn to the impact of a professional woman in society and the nation, we will have to logically consider it under several heads.

The woman in profession while carrying out her duties, at the same time raises problems, faces problems, and also causes changes in herself, her home, office, in her community, society and ultimately to the nation. These are of varying magnitudes, depending necessarily upon the type of profession, the number of women in such profession, the intensity with which she performs her various jobs and the restraining or constraining influences of herself, her family, her neighbouring community, social attitudes and other factors.

If we consider the married women, the married woman in the office has certain problems to face. No doubt she resorts to more frequent leave taking than the unmarried woman but these leave takings are viewed very kindly — the general attitude being that one cannot expect anything better from women, especiallyif, they are married.

She exerts more to prove herself

Though the woman might be talented in her work, the fact that she is married, is taken into consideration and she is usually disqualified from hard work or work demanding much precision and regularity. This might be true to a certain extent in a small percent of cases, yet these leave the working woman with an ambition, at a disadvantage, so that in order to prove herself to be capable of good work, she has to exert herself more than her male colleague. Additional worries and responsibilities at home, problems faced regarding up-bringing of chil-

JOINT FAMILY GIVES INDIAN WORKING WOMAN A BETTER DEAL THAN HER COUNTERPART IN ADVANCED COUNTRIES

dren and tending to the wants of a husband and other elders in the family, are all part of the life of a working woman. This of course is common to the working women in the rest of the world but in countries like India working women have help in two ways. One, the presence of elderly relatives at home which a joint family system, ensures in a country such as ours and secondly the availability of service. The working women in the U.S.A. cannot afford service. Indeed servants are a rarity and the entire responsibility of running a home falls on the woman whether she has a career or not. Secondly there is no joint family system in the U.S.A. It is only extremely rarely that father and son and their families live together. When a boy or girl is 18 years of age, they prefer to deal with all matters themselves, rather than depending upon their parents. This is true of, over 95% of families in the U.S.A., under such circumstances, it is important to obtain any help they can muster, from any source. **Therefore the working woman in the U.S.A. is at a far greater disadvantage than the working woman in a country like India.**

The working woman in the U.S. has to maintain her apartment in addition to cooking, cleaning dishes, doing her laundry (for there is no dhobi in the U.S.A.). In addition she has to go to the markets for groceries and vegetables and to look after the various needs of the children and the husband in the family. Her husband probably would help but this may not be adequate. By the time she has finished all this work and resorts to official work, she is no longer interested in maintaining any ambition regarding success, promotions etc. in her career as a working woman.

Promotions :

One other problem confronted by the working woman is the fact that people in general are more likely to consider her on the merit of her sex rather than on her abilities. However smart, brilliant and talented a woman is, the minute she comes forward to work in any capacity as a wage earner, the fact remains that the first impact she produces is as a result of her being a woman and her talents and merits are only secondary. This is a statement which is true trhoughout the world even in such an enlightened society as in the U.S.A. This leads to various problems and a number of impossible situations. One example is seen when promotion lists are being considered, in a given department, it has been the experience of a number of women to find that given equal chances and equal qualifications it is always the man who is preferred rather than the woman. The woman has to be at least twice more efficient to prove her worth before she can obtain a promotion. This is an incongruous situation and yet it is true for a number of jobs especially in the higher categories. As it is, it is difficult as a general rule for a woman to be either appointed to these jobs or even be considered worthy for these jobs. For however ambitious and courageous a woman is, she is still considered too delicate, for certain jobs.

Transport Etc :

Generally the married working woman is found living in the outskirts of the city as living here, is much less expensive than living in the heart of the city, the house rent is cheaper and the prices of various groceries is much cheaper. The disadvantage here is the distance and transport is a problem. Therefore in these cases, the car which is needed by the family is taken by the head of the family and the working woman is to resort to the tube or bus. Naturally this adds to the stress of modern living, since travel in these modes of transport in New York and other big cities is extremely tiresome because of the crowd and because of the non-availability of service in time. This naturally results in some delay which is taken as an expression of inefficiency in work and lack of interest and enthusiasm and as such women are not considered suitable for important and responsible work.

More women work in the U.S.A. compared to India, perhaps because job opportunities are greater. Life is set at a brisk pace and people, (women not being an exception) work harder. Perhaps the women are happier, because the majority do not have such vital problems as we in India face — food, clothing and education for the children. They are certainly more independent.

BUT ALL OVER THE WORLD

WORKING WOMEN HAVE TO STRUGGLE HARD FOR RECOGNITION

At the intellectual level however, working women all over the world face the same problems—struggling for recognition against many odds—the most significant being the male 'ego.'

The Professional women therefore while facing a number of problems at the same time earnestly contributes to the betterment of humanity and therefore one can assume that with the entry of increasing number of such professional women, the nation undoubtedly stands to benefit from their services.

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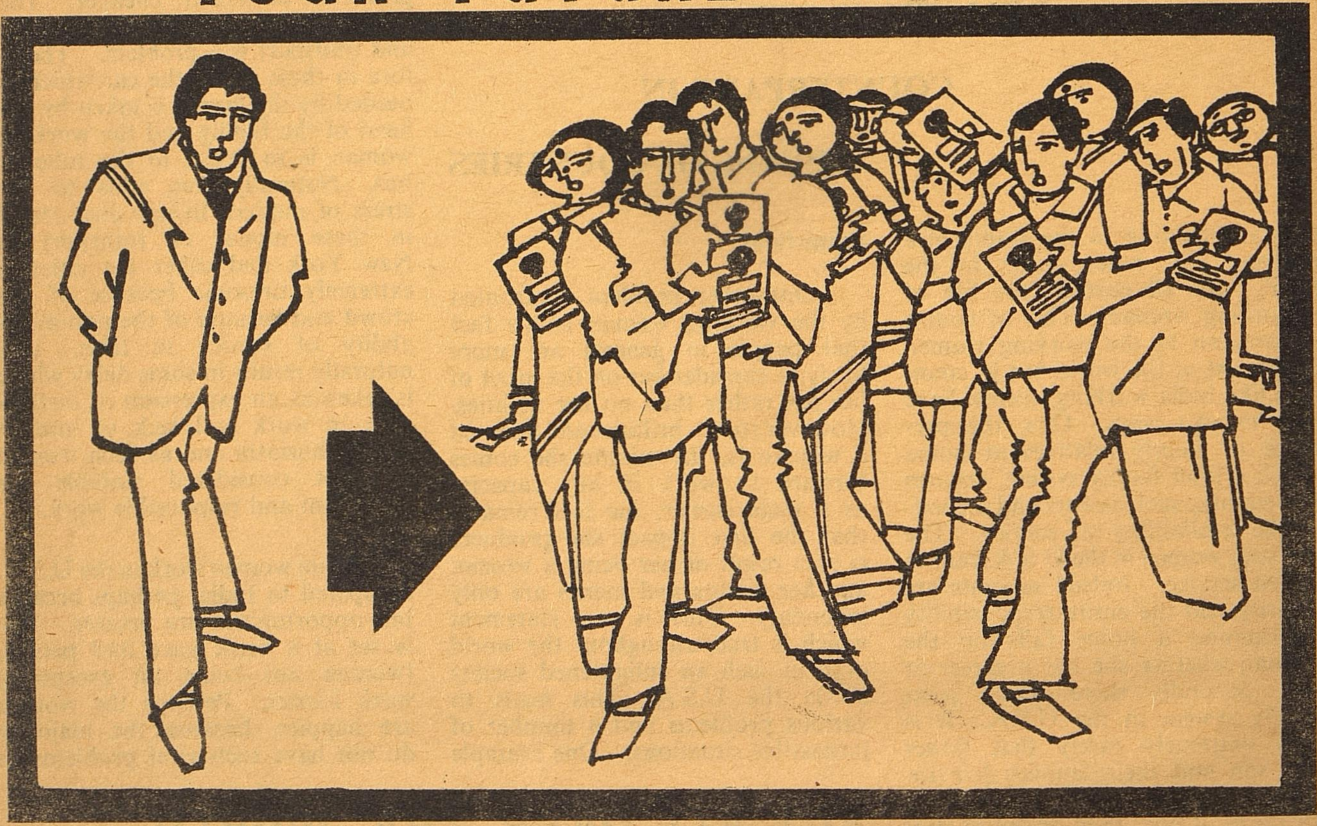

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PLAN	A	B	C	D	E	F	G
Monthly Subscription (Rupees)	10	10	10	10	20	30	60
Subscription period (Years)	10	15	20	25	20	15	10
Monthly pension for 30 years (Rupees)	20	35	60	100	100	100	100
Lumpsum at the end (Rupees)	1500	2500	4000	5500	8000	8000	9500

Subscription can he paid into sub-treasuries or participating banks.

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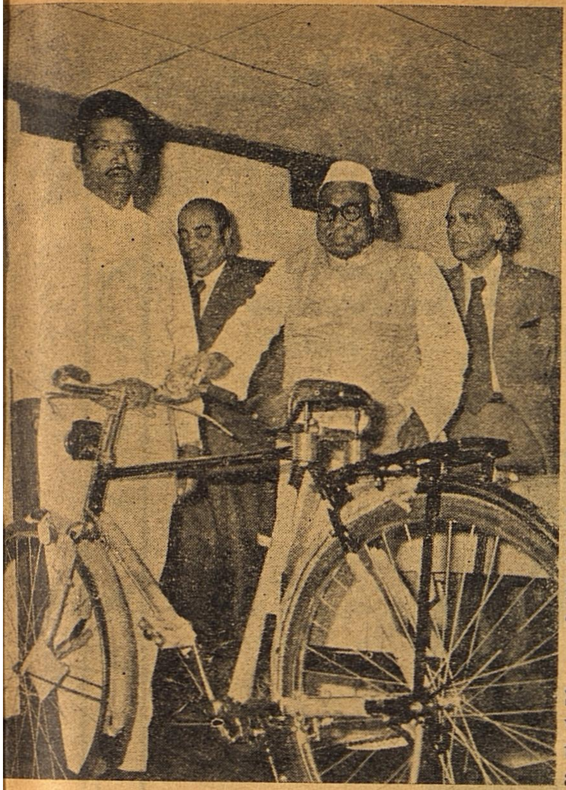


TAMIL NADU GRAMSEVAK BECOMES COUNTRY'S BEST

Thiru A.P. Subramaniam of Palacode Panchayat Union, Dharmapuri District was adjudged the best Grama Sevak for the whole of India for the year 1973—74. The Prize has been awarded after a country-wide assessment of the work turned by Gramasevaks.

The first prize winner Thiru A.P. Subramaniam has put in 13 years service as Grama Sevak. He has been working in Marandahalli area of Dharmapuri District for the last 2 1/2 years. This circle covers 26 villages spread over an area of 8,006 hectares and has a population of 43,815.

Before taking the job of Grama Sevak in 1962, Thiru Subramaniam was a School Teacher. He gave up that job to become a Grama Sevak as he felt it gave him wider scope to serve the people. **Perhaps his will to work for the welfare of people takes him to 4 villages in a day and to block office twice a week.**

Activities like popularising family planning and small saving, helping the people keeping the villages clean and helping the farmers in getting loans from the co-operatives keep him busy. **He is specially interested in serving the Harijan Community.**

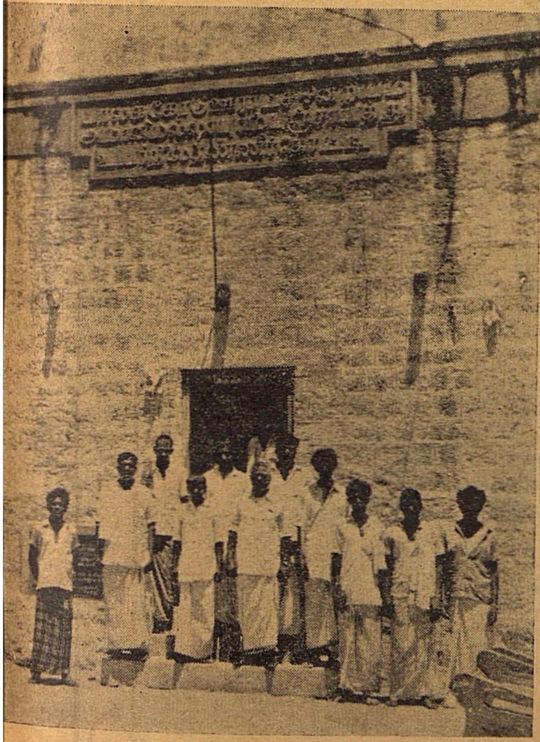
Prize Winning Village

The village A. Mallapuram in Palacode Block of Dharmapuri district was adjudged the best village at the National Level for 1973—74 and awarded a prize of Rs. 7,000/-.

Spread over an area of 1,601 hectares, this village has a population of 8,194. Out of the 896 households in the village, 563 are engaged in farming. Gross cultivated area during 1973—74 was 1,500 hectares out of which 950 hectares were irrigated. Another 112 hectares were brought under irrigation during the year.

All the households engaged in farming took up HYVP in both Kharif and Rabi. Gross area under improved seeds was 986 hectares and under double or triple cropping, 1,543 hectares. Production of compost was 7,250 tonnes, and 950 quintals of fertilisers were distributed in the village.

Of the 896 households in the village, 543 were covered by co-operatives, 542 adopted family planning methods while 114 sterilisations were done, 430 particpated in people's contributions amounting to Rs.860/-. During the year of competition 173 pucca houses were constructed, 178 houses had smokeless chullahs, and three new drinking water wells and hand pumps were provided. 15 kms. of new katcha roads were constructed and 30 sq. meters of lanes were paved. 1,213 children were in school and 364 adults were made literates.



TOP: *Award - Winning Gramasevak The Country's Best Panchayat of 73—74 Competition A. Mallapuram is shown along side, while the members of the Panchayat are to be seen in front of the Panchayat Office in the picture above.*

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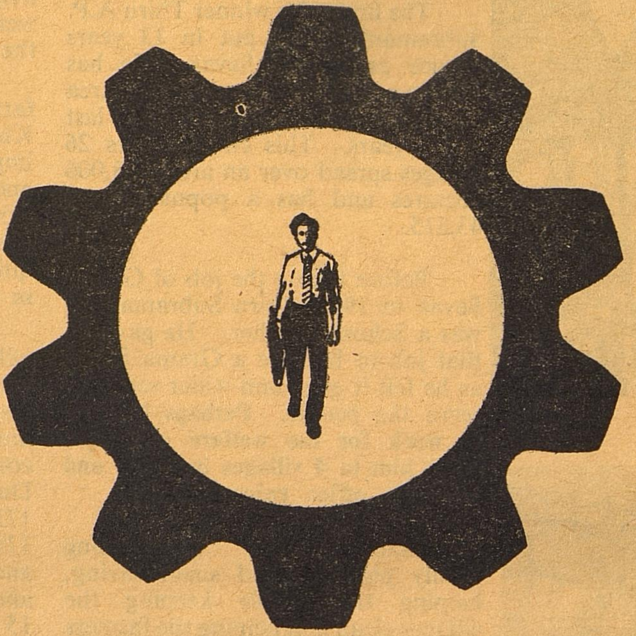

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A New Trend in Education Launched

Institute of Co-operative Education Tiruchi

The State Institute of Co-operative Vocational Education, Tiruchirapalli is yet another example of the progressive policies of the Government of Tamil Nadu in the field of education. Our revered Chief Minister who has already set an example to other States by bringing about a number of progressive programmes to better the socio-economic-conditions of the people of the State has added yet one more by approving the scheme submitted by Thiru M. Vaithialingam, Collector of Tiruchirapalli for the establishment of this Institute at Tiruchirapalli for the promotion of Co-operative Programmes of Education. Dr. Navalar Nedunchezhian is the Chairman of the Governing Council of this newly established Institute.

Why Co-operative Education ?

It is widely accepted and acknowledged by all these days that the central problem of our present day system of education is its lack of relevance to the rapidly changing socio-economic needs of the society. What is urgently needed today is to reorganise our system of education and reorient it so as to make it more responsive and responsible to the changed and continually changing society with all its scientific, technological, industrial, economic and social implications. This can be achieved only by exposing the students of our colleges and universities to the various activities of the society by providing them with ample opportunities to gain direct experience and better understanding of the adult world into which they will enter at the end of their studies. In other words, their class-room education should be linked meaningfully with the activities of the society in which they will live and work after their formal education. Co-operative programmes of education aim at achieving this end and well-designed co-operative vocational programmes of education meet this purpose most eminently.

What is Co-operative Education :

(*a*) **Philosophy** : Co-operative education is a plan of education that integrates class-room study with planned and supervised work experience. It is called co-operative education because it is dependent upon the co-operation of outside agencies and educators in combining to produce a superior total educational programme for the students. The students participate in such programmes because they wish to acquire qualification for a pre-determined area of competitive employment.

The following factors are to be adhered to as closely as possible in all programmes of co-operative education :

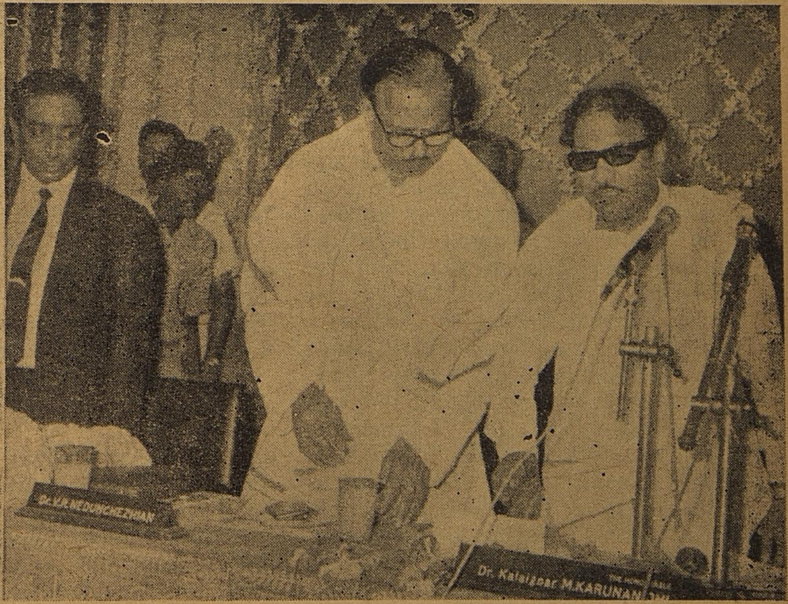
(1) The student's off-campus experience should be related as closely as possible to his field of study and individual interest within the field.

(2) The employment must be a regular, continuing and essential element in the educational process.

(3) Some minimum amount of employment and minimum standard of performance must be included in the requirement for the degree or certificate presented by the Institution.

(4) The working experience will ideally increase in difficulty and responsbility as the student progresses through the academic curriculum and, in general, shall parallel as closely as possible his progress through the academic phase.

(**b**) **Calendar Patterns** : Programmes of co-operative education can be developed around a number of different calendar patterns. Usually students alternate periods of study with periods of employment on the quarter, trimester, or semester calendar of the institution. Under this plan of alternation, the summer is also used for study or work. The utilization of a twelvemonth calendar for both work and study reduces the extension of the total time to



The State Institute of Co-operative Vocational Education Tiruchirappalli was inaugurated by the Hon'ble Dr. Kalaignar, M. Karunanidhi, Chief Minister of Tamil Nadu.

complete the academic courses and makes it possible to keep co-operative jobs filled on a year-round basis by pairs of alternating students.

(*c*) **Advantages :** The following are some of the major advantages of a co-operative programme of education :—

(1) By co-ordinating work-experience with campus education, theory and practice are closely related.

(2) Work experience brings greater sense of responsibility and a greater dependence upon the student's own judgment.

(3) Students of this programme develop greater human-relations skills because their work experience involves them with co-workers coming from a variety of backgrounds.

(4) Co-operative education gives the student contacts which are useful in later occupational placement.

(5) A number of firms would find that the programmes help maintain a steady flow of trained personnel.

(6) It gives many students a head start in salary and position when they go into full-time jobs.

The co-operative education is thus highly valuable not only for the students, but also for the employers, institutions and the society at large.

Details of the Institute :

(*a*) **Management and Finances :**

The Institute is financed by the Government of Tamil Nadu, and to ensure speedy development, the administration and management of the affairs and finances of the Institute have been entrusted to an autonomous Governing Council, registered under the Society Registration Act, with the Minister for Education, Dr. Navalar V.R. Nedunchezhian as Chairman, the Collector of Tiruchirapalli Thiru M. Vaithialingam as Deputy Chairman and Prof. P. S. Mani Sundaram (Principal, Regional Engineering College, Tiruchirapalli), Thiru V.R. Deenadayalu (General Manager, Bharat Heavy Electricals Ltd., Tiruchirapalli), Thiru S. Vaiyapuri, (Additional Director of Technical Education, Madras), Thiru T. M. Narayanasamy Pillai (Former Vice-Chancellor of Annamalai University, Chidambaram) and Dr. K. P. Jacob, (Professor of Physics, Regional Engineering College, Tiruchirapalli) as members.

(*b*) **Location:** The State Institute of Co-operative Vocational Education is at present located at the Regional Engineering College, Tiruchirapalli. Detailed plans for the development of a separate campus for the Institute are being worked out.

(*c*) **Courses Offered** : To start with, the Institute offers the following courses from the academic year 1975—76 and the number of students to be admitted in each course will be 20.

(*i*) Architecture and Interior Design.

(*ii*) Electrical Appliances and Systems.

(*iii*) Textiles and FashionDesign

All these courses are of 3 1/2 years or 42 months (14 quarters) duration. The courses are designed so that all the students will receive 24 months (8 quarters) of institutional training and 18 months (6 quarters) of work experience in the fields for which they are preparing.

(**d**) **Admission requirements :** (1) Candidates must have passed the Pre-University Examination of the Madras University with Mathematics and Physics or Physics and Chemistry or Commerce and Mathematics as two of the subjects under Part III or an examination of some other University/Board accepted as equivalent thereto and must have obtained not less than 50% of the marks in the concerned subjects.

(2) Candidates who have passed B.Sc. or B.Com., with Mathematics, Physics, Chemistry or Commerce of a recognised University are also eligible for admission.

(3) Seats are reserved for the candidates who belong to backward class/Scheduled Caste and Scheduled Tribes, as per rules.

(4) The selection of candidates will be on the basis of their marks in the qualifying examinations and an aptitude test and their performance in an interview.

The establishment of this State Institute of Co-operative Vocational Education will not only be a milestone in the history of the development of education in the State of Tamil Nadu but also serve as an example for the other States in the Country to emulate.

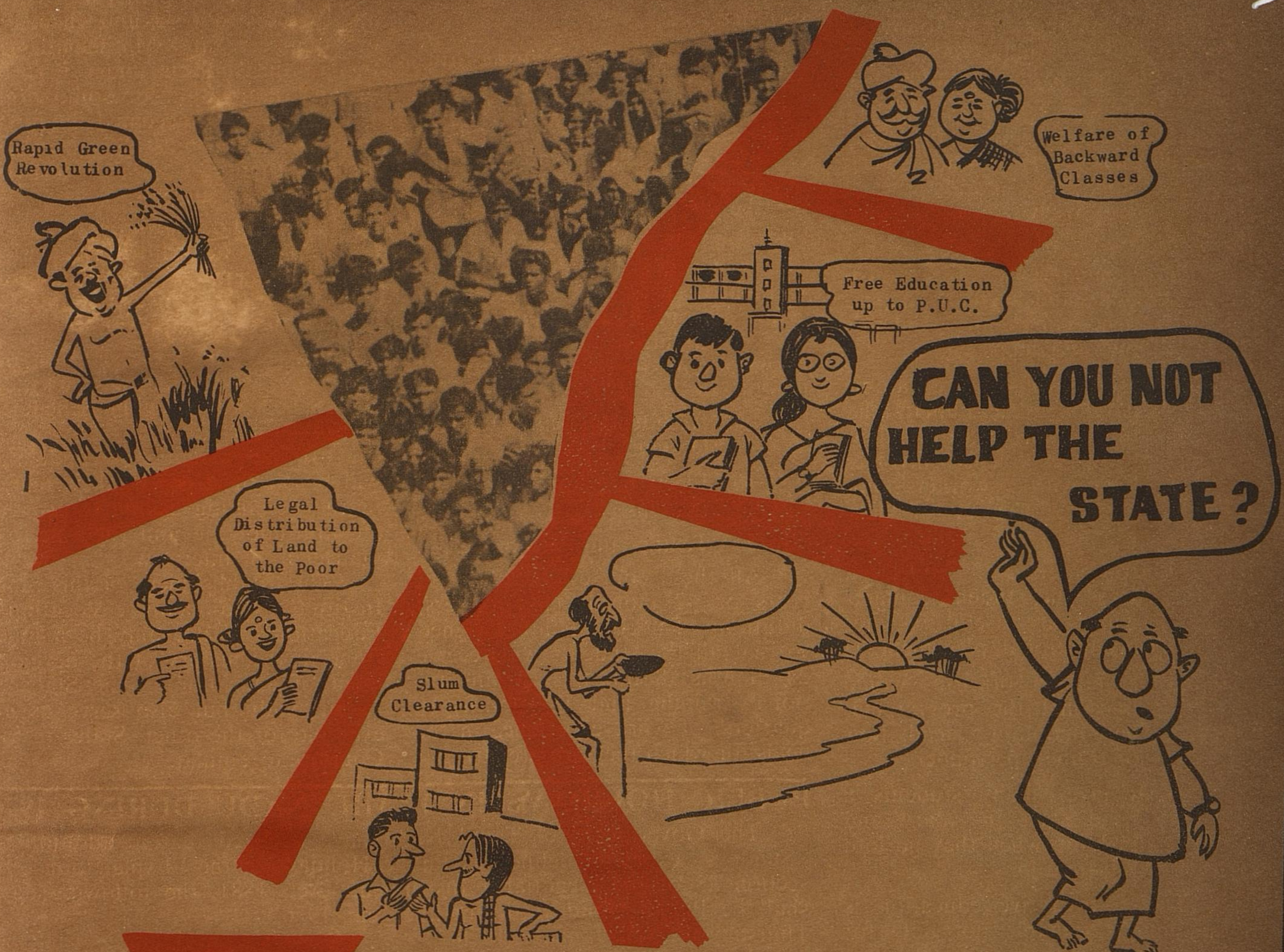
PUBLIC HOLIDAYS IN TAMIL NADU DURING 1976

The Government of Tamil Nadu have declared that in addition to 'Sundays' expressly defined as Public Holidays in the 'Explanation', to section 25 of the Negotiable Instruments Act, 1881, the following days shall be Public Holidays during the year 1976 :—

Thursday, the 1st January, 1976	— New Year's Day
Tuesday, the 13th January, 1976	— Muharam
Wednesday, the 14th January, 1976	— Bhogi
Thursday, the 15th January, 1976	— Pongal
Friday, the 16th January, 1976	— Thiruvalluvar Day
Monday, the 26th January, 1976	— Republic Day
Monday, the 15th March, 1976	— Meelad-un-Nabi
Wednesday, the 31st March, 1976	— Telugu New Year's Day
Tuesday, the 13th April, 1976	— Tamil New Year's Day
Friday, the 16th April, 1976	— Good Friday
Saturday, the 1st May, 1976	— May Day
Wednesday, the 30th June, 1976	— Half Yearly closing of Bank Accounts
Saturday, the 28th August, 1976	— Vinayaka Chathurthi
Saturday, the 25th September, 1976	— Ramzan
Friday, the 1st October, 1976	— Ayudha Pooja
Saturday, the 2nd October, 1976	— Mahatma Gandhi's Birth Day
Friday, the 22nd October, 1976	— Deepavali
Friday, the 3rd December, 1976	— Bakrid
Saturday, the 25th December, 1976	— Christmas
Friday, the 31st December, 1976	— Annual Closing of Bank Accounts

As Independence Day falls on Sunday and one holiday for Ayudha Pooja which falls on Mahatma Gandhi's Birthday they have not been shown in the above list of holidays.

Government have also directed that all offices under the control of Government of Tamil Nadu will be closed on all Second Saturdays in the year 1976 and holidays mentioned above except Wednesday the 30th June, 1976 and Friday, the 31st December, 1976.



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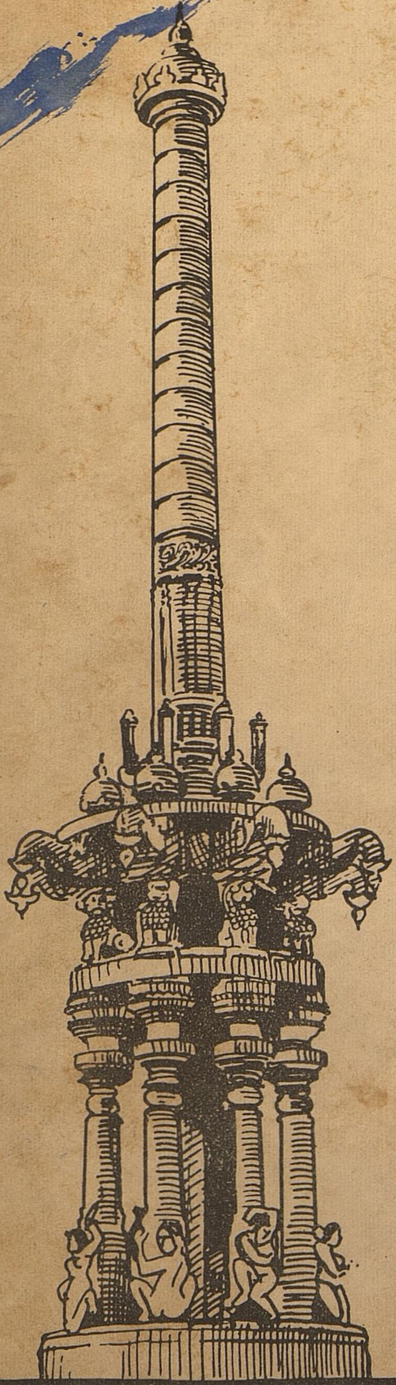

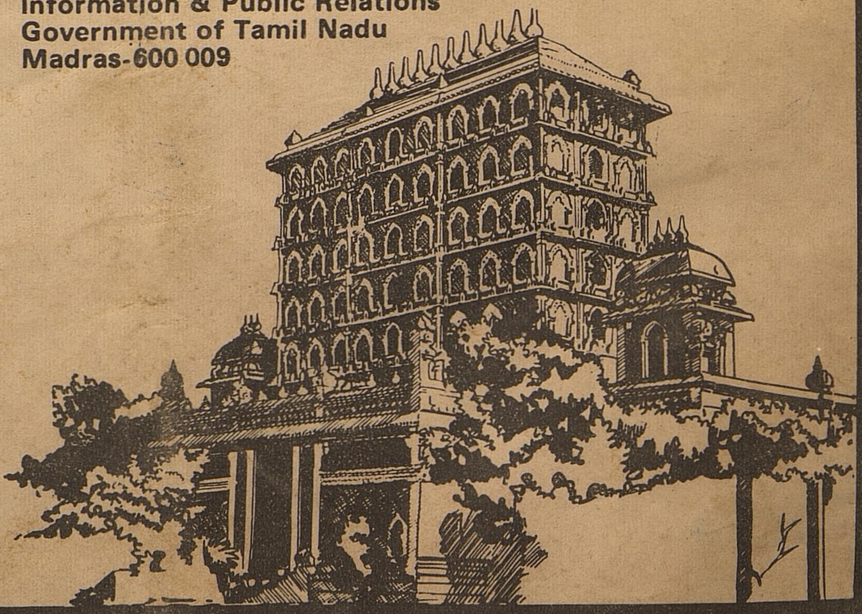

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